

**Skills-based childbirth and coaching preparation: self-efficacy and other
psychological birth outcomes for first births**

By

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Abstract

Effective childbirth preparation has been found to increase confidence and consequently childbirth self-efficacy. A randomised controlled trial examined the effectiveness of a skills-based self-teach childbirth preparation programme to determine its impact on childbirth self-efficacy for mothers and fathers. Secondly, the trial examined whether the intervention modified pregnancy anxiety, birth satisfaction, parenting self-efficacy, family life satisfaction, and postpartum depression. Qualitative analyses were also planned to examine comments. Lastly, this research project planned to examine whether the midwife, as an independent practitioner, benefited when clients undertook skills-based childbirth preparation.

Method

A sample of 137 first-time mothers and 116 of their partners was recruited from throughout New Zealand from beginning of May 2011 until the beginning of April 2013. Mothers 18 years or over and 42 years or less were eligible. Fathers were aged 18 years or over with no upper age limitation. Couples needed to be living together with both intending to parent a first child. Marriage was not a requirement. Couples required sufficient competency with the English language to be able to complete the questionnaires.

Traditional and online recruitment strategies were used. Eligible participants were randomly assigned to one of three groups – Intervention, Active Control, or Passive Control on completion of questionnaire one at 24 weeks gestation. After randomisation, participants in the Intervention Group were sent a childbirth/childbirth coaching preparation programme and those in the Active Control Group were sent a book of curated birth stories. The Control Group received nothing extra. All groups were asked to continue with their original plans. Participants completed three further questionnaires at 36 weeks gestation, post birth, and at six months postpartum, plus other questions and comments sections developed for the study.

Quantitative data was analysed using one-way ANOVAs, repeated measure ANOVAs, and hierarchical multiple regression. A post hoc analysis was also conducted to test for potential prognostic variables for birth satisfaction, parenting self-efficacy, family life satisfaction, and postpartum depression irrespective of group assignment. Comments were analysed, using thematic methodology informed by Interpretative Phenomenological Analysis (IPA), to give a detailed examination of personal lived experience. Analyses were completed separately for men and women.

One hundred and four midwives acting as Lead Maternity Carers (LMCs) elected to complete a brief three question survey regarding their stress levels when working with the participants in this project.

Results

A 3X2 repeated measures ANOVA revealed that mothers in the Intervention Group changed differently over time, reporting a higher increase in childbirth self-efficacy over time and a lowering in family life satisfaction over time compared to both the Active and Passive Control Groups. One-way ANOVAs revealed that mothers in the Intervention Group reported significantly higher childbirth self-efficacy compared to the other two groups at 36 weeks gestation. However, a one-way ANOVA did not find a significant difference in family life satisfaction between groups at six months postpartum. A one-way ANOVA revealed that mothers and fathers in the Intervention and Active Control Groups reported higher birth satisfaction compared to the Passive Control Group.

For mothers three major themes emerged from the phenomenological thematic analysis of the data. When she felt she *owned her process*, had good *care/carers and support/supporters*, and had a *safe delivery*, the mother reported higher birth satisfaction. For fathers four major themes emerged. When he felt confident of the *safety of mother and baby* throughout the process, that he had an *understanding of his support role*, that he saw *mother in control and managing the pain* of childbirth, and that *care and communication during and after birth* met his expectations, the father reported higher birth satisfaction.

A post-hoc regression analysis found there were many significant associations with other factors for the outcomes of birth satisfaction, parenting self-efficacy, family life satisfaction and postpartum depression for both mothers and fathers.

An ANCOVA correcting for unexpected complications (these introduce new circumstances and professionals which may increase stress levels for midwives as well as participants) determined that midwives working with the Intervention Group experienced less work-related stress than they generally experienced when working with their clients who delivered without complications compared to the midwives working with the other two groups.

Conclusions

The skills-based childbirth preparation in the intervention was effective in increasing mothers' childbirth self-efficacy and decreasing work-related stress generally experienced by midwives. Mothers and fathers in both the Intervention and Active Control Groups experienced greater birth satisfaction suggesting that having something that they felt prepared them for childbirth

may have had a positive impact. The exploration for themes indicating what impacted on birth satisfaction highlighted the issues which influenced each parent's perception of his/her experience of the birth of their child. Birth satisfaction, parenting self-efficacy, family life satisfaction and postpartum depression were found to be influenced by a complex array of factors. In its totality, this research project provides evidence for offering women and their partners further ways to prepare for childbirth.

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Dedication

This work is dedicated to my loving partner Blair McBride who was instrumental in my meeting the countless challenges, both academic and personal, this journey has demanded. You have mopped up my tears when some computer glitch, usually of my own creation, caused me to lose sections of my work. And then you have used your amazing computer skills to find this work for me. Thank you for taking steps to ensure my work was so well backed up, that I could never lose it again, and for so patiently helping me out of all the other scrapes I got into with my computer. Thank you for writing the software for, and conducting the prize draws which added a little excitement to this research project. Thank you for your unwavering love and your constant faith and belief in my ability to complete this project, particularly when other life circumstances became difficult and challenging. Together we have faced these many challenges but our togetherness has got us through.

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Overview of research project

Preparation for childbirth and parenthood begins during a first pregnancy. This would appear to be an ideal time to ensure that all new parents have the best preparation possible, not only for childbirth itself, but for developing parenting identity so that they experience a sense of family wellbeing. Identifying problems early and applying appropriate psychological interventions which support families according to need may help foster greater family wellbeing.

The developer of a different approach to childbirth preparation, the skills-based birth preparation programme *The Pink Kit Method for Birthing Better*® (CKT, 2001), claims that a skills-based approach to childbirth preparation would better prepare both parents for coping with childbirth by enabling them to take more control and to play a more independent role in the birth of their child, regardless of the mode of birth experienced. The claim is that this approach would have positive effects for both parents by creating a skilled birthing population. The knowledge of, and the ability to apply, such skills would increase **childbirth/childbirth coaching self-efficacy**.

A number of other questions were also asked in this project. Consequent to a possible increase in **childbirth/childbirth coaching self-efficacy** through developing these skills, would **pregnancy anxiety** be reduced and **birth satisfaction** enhanced? Would the life skills mastered, such as communication skills and working together as a team for the birth of their child, transfer, consequently giving new parents excellent preparation for parenting together? Would **parenting self-efficacy** and overall **family life satisfaction** be boosted? Would positive experiences of a well-managed birth and successful early parenting along with a satisfying family life then see the incidence of **postpartum depression** decline?

The developer of the programme also claims that parents using skills-based childbirth preparation would benefit the parents' Lead Maternity Carers (LMC [in this project LMC refers to a midwife]). Midwives working with more confident clients could find that their work-related stress levels were reduced because of a decrease in client dependency.

The primary purpose of this research project was to determine whether the claims made by the developer, for both mothers and fathers, could be substantiated, as well as whether there could be other flow-on effects using a prospective longitudinal **randomised controlled trial** (RCT) with three conditions:

- The Intervention Group was issued *The Pink Kit Method For Birthing Better*®
- The Active Control Group was issued a booklet of a variety of birth stories
- The Passive Control Group was issued nothing extra

The six outcome measures for both parents were:

Primarily:

- Childbirth self-efficacy (mothers), and childbirth coaching self-efficacy (fathers), at 36 weeks gestation

Secondarily:

- Pregnancy anxiety at 36 weeks gestation
- Birth satisfaction
- Postpartum depression at six months
- Parenting self-efficacy at six months
- Family life satisfaction at six months

Secondly, a **qualitative data analysis**, using thematic analysis informed by Interpretative Phenomenological Analysis (IPA), was planned to examine the phenomenological experiences of childbirth encountered by both the mothers and the fathers. This was dependent on the availability of data provided by participants. While not compulsory, opportunity was provided for participants to comment further on their childbirth experiences in the post birth questionnaire. The purpose was to deepen the understanding of the quantitative results and build a more complete picture of what constituted a satisfying childbirth experience from both the mother's and the father's perspective. The qualitative analysis also provided the potential for the identification of issues previously not considered.

Thirdly, the possibility of conducting a **post hoc analysis** to examine for potential prognostic variables for birth satisfaction, and the six month outcomes parenting self-efficacy, family life satisfaction, and postpartum depression was considered. Such an analysis was dependent on the available data providing an adequate sample size. If it was found to be possible, it was planned to combine the data across the three groups of the trial to treat data like that of data in a prospective observational study. It was planned to use findings from published literature and the other analyses in this project, in particular, the qualitative analyses, to develop hypotheses for a post hoc analysis. The purpose was to determine whether early markers of possible difficulties could be identified, thus giving a potential for early therapeutic interventions.

Fourthly, the **midwives' data analysis** sought to determine if there were differences in the levels of work-related stress midwives experienced when working with the participants in the three groups. Also of interest was how the work-related stress experienced when working with participants in the trial compared to the work-related stress generally experienced by midwives when working with clients in their private practices (comparative

work-related stress). These data were to be compared between the three groups midwives cared for. The purpose was to determine whether a skills-based preparation by clients would take some of the pressure off midwives, thus reducing their work-related stress. If so, encouraging clients to develop childbirth/childbirth coaching skills may have the potential to encourage midwives who had been at risk of burnout to remain in private practice.

The dependent variables to be examined in the randomized controlled trial have often been studied in isolation, making it difficult for researchers to fully grasp their interconnected nature. Although there are several excellent general reviews of these individual factors, due to the complexity of the inter-relatedness of the factors, a comprehensive review of a truly holistic approach is difficult and beyond the scope of this thesis. However, the first four chapters discuss the current understandings of these factors and endeavour to put these findings into context with each other and demonstrate how in the real world, these factors can impact on parental identity development and consequently family wellbeing (including family relationships, behaviours, and mental and physical health).

The following Introduction discusses the background for this research project. Chapter One outlines the historical context into which this intervention was introduced. Self-efficacy and its impact on mothers and their midwives is discussed. As well, it critically examines findings on self-efficacy including a New Zealand study examining childbirth self-efficacy. Chapter Two investigates in greater depth research relating to labour and birth, the impact of different factors on birth satisfaction, and indicates the potential consequences of birth satisfaction for the mother. Chapter Three evaluates research findings on parenting self-efficacy, family life satisfaction, postpartum depression, and their implications for parental identity development and the development of the child and how this affects overall family wellbeing. Chapter Four critiques research outlining the formation of parental identity and the implications for parents, child, family life, and community. Chapter Five presents details of a New Zealand qualitative study on birth satisfaction (the pilot study - *First time birth experiences within the New Zealand midwifery driven maternity system* (later referred to as *First time birth experiences study*) (Howarth, 2010) which provided the rationale for the selection of a skills-based preparation approach to childbirth and parenting together (*The Pink Kit Method for Birthing Better*®) as the intervention for this trial. It gives a summary of the features of this childbirth preparation programme. Finally, this chapter presents the rationales, designs, aims, research questions, and hypotheses of the four components that make up this research project. These chapters are followed by method, result, and discussion chapters to complete the thesis.

Chapter 1 – Recent historical background of birth in New Zealand, childbirth preparation, childbirth self-efficacy and its impact on the client and the midwife

1.1. Chapter overview

This chapter discusses the historical background of childbirth in New Zealand as well as current childbirth preparation. An untested skills-based approach to childbirth preparation, contained in the intervention selected for this trial [*The Pink Kit Method for Birthing Better*® (Common Knowledge Trust, 2001)] is introduced into this context. It also discusses Bandura's Self-Efficacy Theory, childbirth self-efficacy, and its potential impact on the client and midwife.

1.2. Medicalization of childbirth

Since the beginning of the industrial revolution in the mid-nineteenth century, many changes have occurred in the care of pregnant and birthing women in Western societies. New Zealand has adopted these changes into its own maternity care system (Stojanovic, 2008). Prior to 1900, Shannon, O'Donnell, and Skinner (2007) recorded that 95% or more American women gave birth at home rather than in a hospital setting. A woman gave birth surrounded by her loved ones and had immediate contact with her child (Bradley, 1996; Sauls, 2002). In New Zealand as well, the majority of births took place in the home (Stojanovic, 2008). As the twentieth century progressed and attempts were made to reduce both new-born and maternal mortality rates, an increasing number of women gave birth in hospitals (Exton, 2008; Rosen, 2004). By 1930 about 50% of American women were giving birth at home. This percentage decreased to only about 1% by the 1970s (Shannon et al., 2007). Likewise, in New Zealand in the 1970s, virtually all births took place in hospital under the care of medical professionals (Stojanovic, 2008). In 2012, 87% of women giving birth in New Zealand did so in a secondary or tertiary birthing facility (Ministry of Health, 2015). Miller (2003) described this move to giving birth in hospital as the medicalization of childbirth. For those mothers and babies who developed life threatening complications, the aim of reducing both infant and maternal mortality has been highly successful (Albanesi & Olivetti, 2009). However, there may have been other unexpected consequences as a result of these changes.

The sense of childbirth being a family event may have diminished as more and more births took place in hospital. Initially partners were excluded to prevent them being a nuisance to medical staff. During their stay in hospital, new-born babies were housed in hospital nurseries with limited contact with their mothers (Bradley, 1996; Miller, 2003). Consequently, Miller (2003) argued that today:

[...] in post-industrialized societies, transition to motherhood involves women in interactions with experts and normative practices as professional management, monitoring and screening increasingly become a feature of caring for women becoming mothers (p. 142)

This approach placed birth in the context of a medical procedure. Miller (2003) suggested that this reliance on expert knowledge and opinion could lead to a culture of dependency on the maternity care provider. It was only when mother and baby returned home from the hospital that the opportunity to establish that sense of family connectedness, considered to be so important for family wellbeing, was possible (Bradley, 1996).

1.3. Recent history of the development of the midwifery care model

During the 1990s, New Zealand saw the emergence of new health care organisations resulting in greater flexibility as to how health services were provided (Ministry of Health, 2001). Many of these were developed to provide specific services such as maternity care (Ministry of Health, 2001). The World Health Report on the New Zealand health care reforms stated:

The New Zealand health care system has embarked upon a difficult phase of reform... The new policies have retained the impetus to greater cost-effectiveness and have returned to decentralized regional structures (French, Old, & Healy, 2001, p.113)

Prior to 1990 and the implementation of the Amendment to the Nurses Act (1990), women went to their GPs to determine if they were pregnant and, if so, to receive maternity care throughout their pregnancies unless there were complications that required specialist attention (Consumer NZ, 2005; Exton, 2008). The GP was expected to be present to deliver their babies and it was not unusual for a GP to care for these children into their adulthoods or until the GP retired. The role of the midwife in this system was to work alongside other maternity professionals in hospital providing care to women during the process of childbirth. This Act now allowed midwives to apply their skills to their full extent by providing continuity of care for women throughout pregnancy, childbirth and the postpartum period (Ministry of Health, 2001). Consequently, many midwives moved from the hospital setting into private practice.

After 1990, as a result of their new status, many midwives set themselves up in private business offering independent continuity of care to pregnant women throughout the second and third trimesters of their pregnancies and for the labour, delivery, and the early postpartum period (Ministry of Health, 2001; Consumer NZ, 2005). As the lead maternity carer (LMC), the

midwife had to be available to attend her¹ client, if required, 24 hours a day, seven days a week, and to be present for the labour and delivery, or provide an acceptable replacement if this was not possible for some legitimate reason. The LMC was required to provide at least seven, and possibly more, home visits over a six-week period until the new mother was coping sufficiently well to be passed onto a Well Child Care Provider such as Plunket.

Until 1996, GPs and midwives often shared maternity care in New Zealand. Many women opted to use both, thus contributing to the doubling in the maternity care budget between 1990 and 1996 (Consumer NZ, 2005). Law changes in 1996, Section 51 of the Health and Disability Services Act 1993 (Ministry of Health, 2009) and Section 88 of the New Zealand Public Health and Disability Act 2000 (Ministry of Health, 2002), stipulated that under the current funding regulations, a woman had to choose one caregiver to take responsibility for her maternity care from the onset of her second trimester². Because a GP acting as an LMC was required to fulfil the same obligations expected of midwives, as well as purchase midwife care during and after the birth, all out of the same budget received by independent midwives, the restriction and reduction of the GP's maternity income made it difficult financially for most GPs to continue to offer LMC services (Consumer NZ, 2005; Exton, 2008). This resulted in a steady decline in the number of GPs prepared to offer maternity care throughout pregnancy, labour, delivery, and the first six weeks post birth, leaving the midwife the primary provider of this care. Guidelines were provided by The Transitional Health Authority Maternity Project (1997) to indicate when a midwife should refer her client for specialist attention (Ministry of Health, 2001).

However, from July 1, 2007, in order to ensure consistent maternity care to all women in New Zealand, new funding was provided for primary maternity health care providers which enabled pregnant women to register with an LMC from confirmation of pregnancy until six weeks after birth (Ministry of Health, 2007). It also allowed for an increase in fees payable to the GP for maternity care in the first trimester. It was hoped to encourage GPs to remain involved in maternity care up to 13 weeks gestation as this is traditionally seen as the risk phase (Ministry of Health, 2007). Ministry spokesman Dr. Pat Tuohy announced that New Zealand needed maternity services which would assist primary health care providers, in this case the GP and LMC, to work together to provide consistent high quality maternity care (Ministry of Health, 2007). This recognised the importance of continuity of care for the pregnant woman, particularly in the early stages of her pregnancy, allowing her to engage her

¹ while there are a small number of males practicing midwifery in NZ, the feminine pronouns are used when referring to the midwife for the sake of simplicity

² week 13 to week 27

LMC while continuing to see her GP. With these changes in the laws for maternity care provision, midwives were now also entitled to order specified maternity related laboratory tests as well as prescribe maternity related medication.

Unfortunately, the outcomes of changes to the maternity care system have not been systematically monitored since their inception. There is still much to be learned about the experience of childbirth and the approach to maternity care in New Zealand and how changes have impacted on New Zealand mothers, fathers, children, and family wellbeing. The World Health Report states:

Policy-makers and planners have learned a considerable amount about what works and what does not in the New Zealand context, but there remain large gaps in the knowledge base (French, Old, & Healy, 2001, p.113)

There are no well-substantiated statistics which can give a reliable picture of the success, or not, of the changes in maternity care in New Zealand throughout these years of reform (Exton, 2008; McGowan, 2009). Consequently, there is also much to be learned about how the changes to midwife status and responsibilities resulting from these changes in government health care policies, combined with the exit of the majority of GPs from maternity care from the second trimester, have impacted on New Zealand midwives who now provide the bulk of New Zealand maternity care. The responsibilities placed on the midwife in her role as LMC are demanding but there has been little research which examines the potential for midwives to experience work-related stress.

1.4. New Zealand midwife models of care

As most births still take place in hospitals, each midwife has to make her own arrangements with any hospital within her area of care (Ministry of Health, 2001). In a study of Auckland midwives who mainly practiced in large obstetric hospitals, Freeman, Adair, Timperley and West (2006) reported that midwives working in this setting leaned towards a medical model of care in their practice, while at the same time offering relationship centred care to their clients. This leaning towards a medical model of care may reflect the influence of the secondary and tertiary hospitals' environment, policies and guidelines set for professionals working within their systems. Midwives may also be influenced by their concern for the safety of their clients as, at the same time all these changes in maternity care were taking place, New Zealand has seen an increase in medical interventions for women giving birth (Exton, 2008; Stojanovic, 2008). However, there are an increasing number of New Zealand midwives who are encouraging women to aim for births that are less of a medical experience and more of a

natural family experience, whether women give birth at home or in hospital (Freeman et al., 2006).

1.5. Current childbirth education in New Zealand – Antenatal and other classes

For many first-time parents, antenatal classes are seen as an opportunity to learn about pregnancy, labour and delivery, and parenting. Although not all New Zealand antenatal classes provide the same programme, more than 80% of New Zealand courses include: signs of labour, ways of managing pain in labour, description of normal and other birthing methods, options available to women in labour and birthing, the benefits of breastfeeding, pelvic floor exercises, relaxation skills, risks and benefits of different birthing methods, how to breastfeed and/or where to get help, and emotional changes after birth (Dwyer, 2015). As well, pregnant women and their partners are encouraged to establish support networks within the group (Stout, Garrett, & Stamilio, 2015). In New Zealand, classes are usually 12 to 15 hours long and begin in the third trimester (Ministry of Health, 2017).

In a prospective observational study comparing one group of women who attended antenatal classes to another whose participants did not attend classes, the birth outcomes of 616 Spanish low risk nulliparous³ women were examined by Arieta-Pinedo et al. (2010). They concluded that antenatal classes did not result in significant benefits during childbirth, apart from the measure of anxiety which was lower in women attending antenatal classes. However, levels of anxiety were significantly higher for the non-Spanish women in the antenatal class group. Arieta-Pinedo et al. (2010) suggested antenatal classes may have increased their anxiety by making them more aware of what could go wrong. In a qualitative study of eight new mothers, Wilkins (2006) reported that women found some of the advice given at British antenatal classes impractical and unhelpful. Arieta-Pinedo et al. (2010) recommended a restructuring of the classes to fit the needs of women today.

However, other studies have come to different conclusions. Dwyer (2015) reported that women felt well prepared for usual births as a result of doing these classes, but did not feel prepared for anything out of the ordinary, like caesareans. One study of childbirth preparation randomly assigned women to a 10-session education course or treatment as usual. They found a dramatic lowering of interventions, including caesareans, after the education sessions (Karimi et al., 2016). Najafi et al. (2016) reported that childbirth classes have been shown to reduce fear and increase chances of normal vaginal deliveries. In a New

³ A woman who has never given birth

Zealand review, ninety-five percent of first-time pregnant women who attended a childbirth education course in New Zealand reported that the course prepared them well for childbirth (Dwyer, 2015).

However, these classes may not be adequately preparing first-time parents for the realities of parenting. In a review of literature, Nolan (1997) reported that antenatal classes often failed to give women a realistic understanding of parenting:

Teaching approaches often promote dependency amongst clients rather than nurturing the decision-making skills required (Nolan, 1997, p. 1198)

Rogan et al. (1997) suggested that this can leave a mother feeling unready for the task at hand and overwhelmed by everything now expected of her.

The effectiveness of public antenatal childbirth classes has continued to be debated over recent decades, due to issues surrounding the available research, including lack of consistency in outcomes measured and the variability of content found in the classes (Stout, Garrett, & Stamilio, 2015). Despite the mixed research evidence of the effectiveness of these classes, the option of attending antenatal classes is routinely recommended by maternity carers.

Paid antenatal classes are also available in New Zealand. Some of these classes focus on homebirths and encourage parents to develop an understanding of the childbirth process. This class teaches the use of breath, focus, massage, birthing pools, and birth positions. Other private providers offer classes which provide instruction in pregnancy yoga; pilates for pregnant women; swimming classes for pregnant women; self-hypnosis as a non-medication pain relief strategy; acupressure for use as a non-medication pain relief strategy; visualization, meditation, mindfulness, and affirmation. Internationally, several of these specific birth preparation methods have been trialed, including cognitive behavioural methods (Koursandi et al, 2013); mindfulness (Dunn, Hanieh, Roberts, & Powie, 2012), and self-hypnosis (Strobert et al, 2015). The evidence for the effectiveness of these cognitive childbirth preparations is best described as early, requiring further trials to substantiate findings before each can be considered an effective maternity preparation. Other providers offer alternative therapies such as osteopathy, naturopathy, and hydrotherapy for use during pregnancy and labour. Other providers offer parenting classes including instruction on breastfeeding, first aid for infants, winding, and settling a new baby. As well, parents also have the option of using books and the internet for information related to childbirth and childbirth preparation as well as early parenting.

In addition to the publicly and privately funded antenatal classes, mothers and fathers are dependent on the knowledge and philosophies of the LMCs they choose to prepare, monitor, and care for them throughout pregnancy, labour, delivery, and through the first weeks of parenting. Parents will form a birth plan with the assistance of the LMC. This birth plan will describe how they wish their labour and delivery to progress. The LMC will also try to ensure they have sufficient information to enable them to make informed choices and decisions should everything not go to plan.

Childbirth preparation today would appear to be extensive, as information becomes more easily available thanks to modern technology (Howarth et al., 2001a; 2011b). It is clear that pregnant women will begin childbirth preparations earlier than, and in addition to, the 15 or so hours involved in antenatal classes offered during the third trimester⁴ (Howarth, 2010). It is another option for childbirth preparation, not available in any antenatal class and which is accessible much earlier in the pregnancy, that will be the focus of the present research.

1.6. Bandura's Self-Efficacy Theory and how it relates to childbirth preparation

The birth preparation package being trialled in this research project made use of Bandura's (1977) Self-Efficacy Theory in developing the childbirth skills as well as the childbirth coaching skills⁵ presented in this package. Self-Efficacy Theory states that self-efficacy⁶ requires more than information (Bandura, 1977). While information will assist in choice and decision making, alone, it is not sufficient in assisting women to manage their labours on a moment to moment basis. Bandura's (1977) Social Cognitive Theory emphasizes the importance of skills to go with information.

According to Bandura (1977), social and self-regulatory skills⁷ and self-belief in personal ability are the necessary components of controlled behaviour. This sense of being in control of personal behaviour is an essential component of self-efficacy. It encompasses the sense that the individual can control his/her motivation, have control over his/her environment and, as a result, have control over his/her behaviour and associated outcomes. The fundamental assumptions of Bandura's Self-Efficacy Theory include four elements:

- information to increase knowledge and understanding about an issue

⁴ Week 29 to week 40 or until the birth takes place

⁵ referring to skills the father can learn so that he can aware of the mother's needs during labour and delivery so that he can encourage and support her to apply her childbirth skills appropriately as required

⁶ belief that the individual can control what is experienced moment to moment, and that the individual has the motivation to do so (Fisher & Fisher, 2000)

⁷ the ability to monitor and control personal behavior, emotions, or thoughts, adjusting them to the demands of the situation, in this case labour and delivery

- related self-regulatory skills development
- enhancement and mastery of the relevant self-regulatory skills
- social support to learn new skills and to maintain them

When these four elements work together to produce the desired outcome, an individual becomes confident in his/her ability to manage a situation and strong self-efficacy is the result. When self-efficacy is low, instruction alone will not motivate people to take control of their behaviours in any situation. Bandura (1977) emphasized the necessity of developing relevant behavioural skills acquired sufficiently early as to enable the individual to internalize them so that he/she is capable of self-motivation to exert personal control in any given event.

Good information assists the development of self-efficacy by contributing towards the motivation required to develop necessary self-regulatory skills (Bandura, 1977; 1982; 1986). It needs to be understandable, believable and culturally sensitive. It needs to be targeted towards the specific group for whom it is intended in ways that are going to be most effective for that group. In respect of pregnancy, labour and delivery, the information needs to highlight what women can expect as their bodies change with the development of the foetus, as well as information about relevant resources and options available to them. Realistic information about labour and delivery and what they can do to assist themselves is also required. Consequently, this information needs to be accessible well before current antenatal classes are available in New Zealand.

Yet, information alone is not sufficient if women are going to develop confidence and feel a sense of personal control during labour and delivery. Bandura (1977) maintains that being able to translate knowledge into the application of relevant skills is necessary to control behaviour in a demanding situation. Self-regulatory skills require an ability to monitor behaviour and employ these skills at the appropriate time. Feeling the relevance of these skills will help motivation to apply skills as required, for example, during labour and delivery. Learning and practising relevant self-regulation skills where appropriate prepares the woman for self-awareness so that she can apply her skills appropriately. She can be assisted in her skill development by role models who demonstrate these skills and use them effectively. Such role models are influential in encouraging people to develop self-regulatory skills (Bandura, 1977; 1982; 1986).

Essential to maintaining a sense of personal control in situations where the individual feels vulnerable, is being able to connect with or strengthen social support when required (Bandura, 1977). Self-regulatory skills are often employed within a social context. A birthing woman rarely gives birth alone. She relies on the support of others to monitor, encourage,

and be there to help her through her labour and delivery. Many researchers have written about the benefits of continuous support since the seminal study done by Sosa et al. (1980). They have all agreed that social support is a key component in encouraging a woman's perception that she can master what she needs to and feel satisfaction with her efforts to cope with the situation she is preparing for (childbirth), and with the experience itself (Bruggemann et al., 2007; Campbell, Lake, Falk, & Backstrand, 2006; Campero et al., 1998; Hodnott, 2002; Hodnott et al. 2005; Howarth, Swain, & Treharne, 2011b; Klaus, 1998; Sauls, 2002).

Combining the four elements of Bandura's Self-Efficacy Theory and practising before the event assists in strengthening self-efficacy. However, it is not always possible to practice all possible childbirth skills before labour and delivery. Khoursandi, Vakilian, Torabi, and Abdi, (2013) reported that by using cognitive rehearsal, a woman can prepare herself for her labour and delivery and give herself needed encouragement that she can manage the situation one moment at a time. This is useful when practising skills before the event, for example, the final stages of labour when the woman needs to push, is not practical, or, as in this case, not safe. Constructive feedback during practice sessions on how skills can be improved has the potential to greatly enhance skills development and a sense of skill mastery. This sense of skill mastery increases self-efficacy. The higher the self-efficacy, the more likely the woman is to use the new skills, especially when the situation becomes challenging. And when these skills have been successfully used in challenging situations, these successes can increase a person's sense of self-efficacy.

1.7. Methodological considerations when reviewing research on pregnancy and childbirth

As it can be difficult to offer behavioural interventions during pregnancy, labour and delivery due to ethical considerations, qualitative and observational research forms the bulk of the following research reported in this introduction. Because qualitative research is heavily dependent on the individual skills of the researcher, objectivity is more difficult to maintain, assess and demonstrate. However, issues which have been explored in depth can result in the emergence of unexpected and new information. Indeed, issues that have been missed by quantitative research may be uncovered through the qualitative process. As the data collected is based directly on human experience, it can be powerful and persuasive. While the data is generally collected from a very small sample of the target population and is consequently not generalizable to the larger population, it is transferable to other settings. Qualitative findings often provide a background for, and basis for quantitative research, as was the case in the present research project.

Observational studies make inferences about the effect of an interaction between variables on participants representing the population of interest. Although participants are not randomly assigned to groups by the researcher, well-designed observational studies can provide valuable new knowledge. However, as with other research designs, observational studies have potential shortcomings which need to be considered. Reasons for loss to follow up need to be considered for their potential effects on findings. Care needs to be taken to ensure that any controls used come from the same population. Approach and reporting needs to be without bias.

The quantitative research reported in this review tends to rely on correlational relationships. However, there may be many other common pathways which contribute towards an explanation of these behavioural characteristics which may not have yet been identified. While correlations are a quick and easy way to determine a relationship, they do not equal causation. It must be remembered that a correlation between two variables reports only that a relationship exists. Only an experiment can establish cause and effect. Consequently, each of the three methodologies plays its own unique but important role in increasing the understanding of questions being investigated.

1.8. Childbirth self-efficacy - feeling prepared and confident

The pilot study for this project examined what contributed towards birth satisfaction for 10 New Zealand first-time mothers (Howarth, 2010). During analysis, it became very clear just how important childbirth preparation was to these 10 women for developing their confidence that they could manage labour and delivery. Taking personal control for childbirth preparation had increased their confidence in their choices and their approaches to labour and delivery (Howarth et al., 2011a).

The analysis demonstrated that most women began these sorts of preparations from the time they found out they were pregnant, for example, stopping alcohol consumption, being extra careful about diet. Reading books and googling to get information were popular. They also engaged with their supporters, their parents, and their midwives to assist in them develop support teams and birth plans from the early days of their pregnancies (Howarth et al., 2011b).

Childbirth self-efficacy (and childbirth coaching self-efficacy for fathers), measured at 24 weeks and 36 weeks gestation, is the primary outcome for the trial in this research project.

1.8.1. Childbirth self-efficacy and control

Control is seen by Campero et al. (1998) as a [...] *key component in a satisfactory labor process* (p. 397). When a person has a strong internal locus of control⁸, in contrast to external locus of control⁹, this person has faith in her own abilities to bring about the outcome she wishes (Rotter, 1966). She approaches the event with confidence in her belief in herself to achieve her aims (Goodman, Mackey, & Tavakoli, 2004; Manning & Wright, 1983).

Phenomenological analysis of data from a qualitative study led Gibbins and Thomson (2001) to suggest that being in control meant different things to different women. They had collected unstructured recorded interview data shared by eight pregnant first-time mothers in late pregnancy and again at two weeks post birth. For some of these mothers control involved being a part of the decision-making process together with the healthcare personnel. For others, it was wider ranging, involving control over the labour process itself, including control over their own emotions and behaviours, including the management of pain.

Feeling in control during labour and birth was defined by Hodnett and Simmons-Tropea (1987) as a sense of mastery over both the internal manifestations of the labour as well as related environmental factors. A sense of satisfaction is achieved by the mother through her confidence in her ability to actively manage her labour and delivery (high self-efficacy) as a result of taking personal responsibility to be prepared (Green, 1999; Howarth et al., 2011a). Thus, a sense of being in control can be seen to reflect childbirth self-efficacy, contributing towards a mother's sense of satisfaction with her perception of her performance during childbirth (Fair & Morrison, 2012; Stevens, Wallston, & Hamilton, 2011).

In an early study applying and developing Bandura's (1977) proposed Self-Efficacy Theory, Manning and Wright (1983) examined 52 American first-time mothers' beliefs about their abilities to manage labour and delivery, before and during, for their levels of self-efficacy. These assessments of self-efficacy were then matched to data about the mother's use of pain medication gained in post-delivery interviews. The aim was to determine Bandura's (1977) Self-Efficacy Theory's applicability to the individual's ability to persist with self-management of pain during labour without resort to pain medication. Manning and Wright (1983) took pains to clearly define their outcome variables. They clarified the differences between self-efficacy expectancies¹⁰ and outcome expectancies¹¹ in their measures. They considered that

⁸ the extent a person feels they can control events

⁹ person feels controlled by fate

¹⁰ individual assessment of personal ability to perform behaviour – in the Manning and Wright (1983) study labour and delivery without pain medication

¹¹ individual assessment of what behaviours are required to lead to the desired outcome – in the Manning and Wright (1983) study a well-managed labour leading to healthy and safe medication free delivery

Bandura (1977) had not been clear enough in the two types of expectancies he proposed as relevant to an expectancy model of behaviour mastery and change, nor had he used outcome expectancies in his own research. They reported that the measures of self-efficacy expectancies and outcome expectancies were highly correlated, thus creating difficulties teasing out just how much each variable contributed towards explaining the dependent variable. This difficulty would have been compounded by the smallness of their sample and the fact that participants were drawn from one childbirth education class in Washington DC metropolitan area. As they did not examine how this specific childbirth education class impacted on the participants' responses compared to mothers who had not experienced such training, they were unable to report whether findings reflected the training received rather than psychological characteristics other than locus of control, which may also have influenced their results.

Nevertheless, with this small sample of first-time mothers, Manning and Wright (1983) conducted hierarchical multiple regression analyses of data matching self-reports of self-efficacy before and during labour with pain medication usage. They felt confident in reporting that a questionnaire measuring self-efficacy expectancies was a better predictor of pain management without medication than any other variable tested, including: outcome expectancy; importance; locus of control; length of labour; type of delivery; and social desirability. Their findings lead Manning and Wright (1983) to conclude that mastery was highly related to self-efficacy.

The confidence shown by Manning and Wright (1983) in their conclusions that self-efficacy expectancies were highly related to mastery would appear to be justified as many researchers have since supported the importance of confidence and control (self-efficacy) during labour and delivery (Campero et al., 1998; Cheung, Ip, & Chan, 2007; Fowles, 1998; Gibbins & Thomson, 2001; Goodman et al., 2004; Green, 1999; Hodnett & Simmons-Tropea, 1987; Klaus, 1998; Koniak-Griffin, 1993; Lothian, 2008; Miller, 2003; van Teijlingen et al., 2003). Goodman et al. (2004) concluded that a woman's childbirth self-efficacy may either facilitate or inhibit her ability to cope with her labour and delivery and thus affect her sense of mastery and consequent level of satisfaction with her birth experience.

1.8.2. Other implications of childbirth self-efficacy

Researchers have found that lower childbirth self-efficacy was also related to higher fear of childbirth and that prenatal anxiety was a predictor of childbirth self-efficacy (Beebe, Lee, Carrieri-Kohlman, & Humphreys, 2007; Carlsson, Ziegert, & Nissen, 2015; Salomonsson, Gullberg, Alehagen, & Wijma, 2013). Increased confidence has been found to reduce prenatal

anxiety that comes from ineffective preparation and has positive effects on how women cope during labour, delivery and post birth (Beck & Siegel, 1980; Byrne et al., 2014; Ip, Tang, & Goggins, 2009; Sieber, Germann, Barbir, & Ehlert, 2006). When a woman is confident that she can cope with the process of giving birth, her ability to reduce her perception of the pain of contractions is strengthened and her fear is decreased (Byrne et al., 2014; Ip et al., 2009; Manning & Wright, 1983). Carlsson et al. (2015) found that women with higher childbirth self-efficacy were less likely to use epidural anaesthesia. Prenatal anxiety was also a predictor of poorer psychological adaptation post birth (Sieber et al., 2006). Ip and Martin (2008) found that the level of confidence 120 Hong Kong Chinese mothers felt as they entered their labours was predictive of the postpartum depression experienced within this group.

1.9. Child birth self-efficacy in New Zealand

The benefits of childbirth self-efficacy for women appear to be well established in studies conducted in countries with different maternity care systems than the one currently in place in New Zealand. Consequently, it cannot be automatically concluded that these findings will apply directly to the New Zealand situation. The following New Zealand study discusses the impact of childbirth self-efficacy on the birthing experiences of New Zealand women.

1.10. A New Zealand study of childbirth self-efficacy

One scientific study examining the childbirth self-efficacy of New Zealand mothers giving birth for the first time was located. Another search was unable to find any published papers that examined the New Zealand father's childbirth coaching self-efficacy¹². Consequently, the following discusses the mother's self-efficacy only. The following New Zealand study, reported in:

Do self-efficacy beliefs predict the primiparous labour and birth experience? A longitudinal study. (Berentson-Shaw, Scott, & Jose, 2009).

provided information relevant to the current research on mother's childbirth self-efficacy.

1.11. Childbirth self-efficacy: *Do self-efficacy beliefs predict the primiparous labour and birth experience? A longitudinal study* (Berentson-Shaw, Scott, & Jose, 2009).

This New Zealand study concluded that:

¹² referring to the father's confidence in his ability to be aware of the mother's needs during labour and delivery so that he can encourage and support her to apply her childbirth skills appropriately as required

[...] perceptions of confidence and control have a role in positive birthing experiences [...] The mobilisation of [...] knowledge and skills leads to more active participation in labour, and [...] a less painful and more satisfying birth experience (p. 369).

Berentson-Shaw et al. (2009) examined childbirth self-efficacy beliefs in relation to pain perception and tolerance, obstetric events, and overall birth satisfaction in a group of primiparous¹³ women. This study expanded on the Manning and Wright (1983) study by including other covariates which may have influenced findings for the dependent variables examined. When all cognitive, behavioural, social, and demographic covariates were taken into consideration, Berentson-Shaw et al. (2009) concluded their findings still stood - strong childbirth self-efficacy influenced pain perception during labour as well as overall birth satisfaction. The mother interpreted the pain as less intense and this perception reduced her distress response to the pain. This finding supported findings from overseas studies conducted by Byrne et al. (2014), Ip et al. (2009), and Manning and Wright (1983).

Women with high childbirth self-efficacy reported higher birth satisfaction regardless of the birth outcome, compared to those women who had low birth self-efficacy:

[...] birth self-efficacy beliefs supersede the impact of obstetric events in predicting birth satisfaction, as stronger self-efficacy beliefs predicted birth satisfaction after accounting for obstetric events. This important finding suggests that regardless of medical intervention women experience during birth a strong sense of self-efficacy will ensure a more positive interpretation of the overall birth experience. (p. 369)

This study recommends:

*[...] that midwives, childbirth educators and other maternity practitioners should use every opportunity they have to build women's birth confidence through the provision of accurate and constructive birth information, especially in relation to **tools** to cope with labour pain. (p. 370-1)*

The Berentson-Shaw et al. (2009) study relied on women to self-select for the study with the result that findings reflected the beliefs and experiences of psychologically healthy and motivated individuals, predominantly of New Zealand European/Other European descent (87%). These women may have experienced different health care and outcomes compared to a randomly selected population which reflected New Zealand's ethnic groups [European

¹³ bearing young for the first time

descent 74%; Māori 15%; Asian 12%; Polynesian 7%; Middle Eastern/Latin American/African 1%(Statistics New Zealand, 2015b)]. This could have introduced bias to the findings.

Despite these limitations, the recommendations of Berentson-Shaw et al. (2009) would find favour with Vincent (2008), a professional midwife working in the Nelson region of New Zealand. Vincent (2008) is a strong advocate for New Zealand women taking more control over their own birthing process by way of learning childbirth skills. However, there is no empirical evidence available regarding the use of the skills-based childbirth preparation advocated by Vincent (2008) in New Zealand or elsewhere. Consequently, anecdotal evidence related to the childbirth experiences of New Zealand women, shared by practising New Zealand midwife, Vincent (2008), forms a part of this discussion to give some indication of the possibilities Vincent (2008) sees in skills-based childbirth preparation. Vincent (2008) collected statistics from her own practice between 2000 to 2006. These showed that after she began using skills-based childbirth preparation with her clients, her rate of caesarean deliveries had dropped from 15% in 2000 to under 5% in 2006. They showed an increase in spontaneous vaginal birth in her practice and a decrease in inductions and augmentations, as well as a reduction in the numbers of her clients using epidurals for pain relief. Comparison statistics from another Nelson midwife who was not using skills-based childbirth preparation showed an increase in caesarean deliveries from 15% in 2000 to approximately 18% in 2006. This other midwife's practice did not show the other benefits noted by Vincent (2008) in her own practice.

Although these statistics do not constitute a robust scientific study, and provide only anecdotal evidence, they have assisted in convincing Vincent (2008) of the effectiveness of learning childbirth skills. She claims that her experience of working with skilled birthing women has shown that strong self-efficacy results from the knowledge that one can cope on a moment to moment basis as a result of the development of specific skills for labour and delivery. Such a claim would appear to be supported by Bandura's (1977) Self-Efficacy Theory which emphasizes the importance of skills to go with knowledge. Vincent (2008) espouses Bandura's Self-Efficacy Theory further with her claims that without the self-efficacy derived from confidence in personal skill levels, women are unlikely to be motivated to change from a more passive approach of reliance on medical professionals to a more self-reliant approach managing their own labours and deliveries. Such comments are also supported by reports from Bradley (1996), Fisher & Fisher (2000), and Miller (2002).

1.12. Child birth self-efficacy and childbirth skills in New Zealand

The *First-Time Birth Experiences within the New Zealand Midwifery Driven Maternity System* study found that women who felt that they had actively prepared for giving birth, so

that they could take personal responsibility, felt well supported and felt they and their babies were in safe hands, were more confident that they could cope with labour and birth (Howarth, 2010; Howarth, Swain, & Treharne, 2011a; 2011b; 2012; 2013). Those who expressed greater confidence consequently felt they had more control during their labours and births. When labour became difficult or complications arose, several mothers felt their sense of control had slipped away. This possibly suggests that when the unexpected challenged their sense of control, their preparation had not given them the skills to cope and the unexpected undermined any initial confidence.

A skills-based programme, which is produced in New Zealand, may have the potential to develop childbirth self-efficacy. The commercially available product - *The Pink Kit Method for Birthing Better*® (Common Knowledge Trust, 2001) is available online to any country with internet access. It retails for approximately \$80.00NZ depending on the country and the exchange rate. The developer of *The Pink Kit Method for Birthing Better*®, Dr Virginia Lubell, offers anecdotal evidence that the labour is generally shorter and complications are fewer when the woman is skilled and able to deliver vaginally. She also contends that the use of skills is not limited to vaginal birth but that developing childbirth skills is applicable to any type of birth. She claims that using the skills offered in the programme results in a sense of control and personal empowerment that comes with an awareness of what is happening during labour and delivery. This awareness is possible because the birthing woman has developed greater childbirth self-efficacy through her mastery of childbirth skills.

To date these claims have not been tested. The present trial aims to discover whether developing childbirth skills increases a mother's childbirth self-efficacy. As the programme also offers childbirth coaching skills for the father, this trial also aims to discover whether developing childbirth coaching skills increases a father's childbirth coaching self-efficacy.

1.13. The midwife and the impact of client self-efficacy

In a paper presenting a historical and empirical review of the attainment of a sense of self as a mother, Koniak-Griffin (1993) identified a lack of self-confidence, inadequate preparation, and dependency on professionals, as potential risk factors mothers for losing personal control during the childbirth process. Later research by Ford, Ayers and Wright (2009) found that British women were still reliant on the support of hospital staff and midwives to assist them to feel in control of their birth processes. Tarkka, Paunonen and Laippala (2000) reported that Finnish women who experienced empathic, tender, and unhurried support from carers who also demonstrated friendliness reported a more positive

childbirth experience. The client's dependency and need for the midwife to provide unhurried and tender support may place extra psychological expectations on the midwife which may result in increased work-related stress.

An increasing focus on what may go wrong during the pregnancy and birth also creates a situation where pregnant women become more anxious and rely increasingly on the expertise of the carer (Miller, 2003). Jones (2012) reported that high anxiety in pregnancy could lead to heightened perception of pain during labour and the establishment of a cycle of behaviours which heighten anxiety during childbirth, resulting in even greater dependency on the carer. Wilkins (2006) reported that women relied heavily on the practical and individualized support given by midwives to cope. While much of this evidence is either anecdotal or qualitative and involves small samples of the target population, it does give an indication that dependency of the client on the midwife is an issue that requires further examination in New Zealand.

Midwifery in New Zealand is a challenging occupation. It requires case-loading lead maternity care midwives to be on call 24/7. However, McAra-Couper et al., (2014) found it also has sustaining rewards for those midwives with a passion for midwifery. Several themes emerged from their qualitative study in which 11 midwives who had practised for at least eight years were interviewed about what sustains them in their work. In particular, McAra-Couper et al. (2014) described the joy midwives experienced in working in partnership with women and their families, assisting women to give birth as the women desired. Nevertheless, McAra-Couper et al. (2014) also emphasized the importance of forming boundaries that enabled midwives to establish professional and personal balance in their lives. While midwives are additionally sustained by their relationships with other midwives and the midwifery community, occupational burnout is still a hazard for New Zealand midwives. This is reflected in the following three dimensions: a sense of depersonalization, emotional exhaustion, and a low sense of personal accomplishment (Sandall, 1998). An Australian study examining the level of work-related stress experienced by midwives working in two public hospital maternity units found that 60.7% of midwives reported moderate to high levels of emotional exhaustion, 30.3 scored low on personal accomplishment, and 30.3% reported depersonalization (put simply, feeling like a robot) (Mollart, Skinner, Newing, & Foureur, 2013; Sandall, 1998). As the response rate from the target population was low (36.8%), it may be possible that these levels of work related stress and burnout could be higher (Mollart et al., 2013). It also must be noted that these Australian midwives had immediate backup support available from hospital resources. New Zealand midwives working as homebirth midwives may face delays in getting their clients to hospitals when childbirth encounters complications.

This is particularly the case for homebirths in rural areas. This places extra demands on the midwife as she works to stabilise her client as she endeavours to get her client the specialist attention required.

In her doctoral thesis examining burnout in self-employed case-loading midwives practising in New Zealand, Young (2011) interviewed 12 midwives and four of their partners to gain an understanding of what burnout signified for these midwives. While midwives initially tried to hide the high cost of being on call in a demanding profession, they were unable to sustain this, nor were they able to sustain the high cost of the emotional pain they endured. The impact of burnout on their lives and the lives of their families was eventually revealed. Young (2011) concluded midwives needed to be aware of the burnout phenomenon and have boundaries and support systems in place to avoid burnout. In another qualitative study conducted by Cox and Smythe (2011), three New Zealand midwives who had recently left their private case-loading lead maternity care practices were interviewed. It was concluded that the passion and commitment midwives bring to midwifery could lead to too high an emotional cost for some midwives.

Anecdotal confirmation that some New Zealand midwives were experiencing emotional exhaustion was gained from discussions with local midwives, and from material presented by Nelson midwife Vincent (2008) to the Nelson Marlborough District Health Board on February 8, 2008. Vincent (2008) described how she had found that the childbirth skill level of women in New Zealand is generally low, resulting in increased pressure on healthcare personnel during childbirth. She described how she would like to see the skills of women giving birth improved to the point where they choose to take control of their own processes, relying on professional assistance only when medical difficulties are experienced. Discussion with two other New Zealand midwives also gave anecdotal evidence that work-related stress for midwives could become very difficult to deal with when clients were overly dependent, resulting in one of these midwives leaving private practice to work in a hospital maternity setting for a rest. Such claims were supported in the rationale midwives provided as part of their justification of a court action for equal pay filed against the New Zealand Government on the 31st August 2015 (Mussen & Mathewson, 2015).

The impact of overly dependent clients on the mental wellbeing of midwives is an area that needs further investigation. It may be that having her clients develop childbirth/childbirth coaching skills would encourage her clients to take greater personal responsibility throughout their pregnancies, labours and deliveries thus reducing their dependency on the midwife. This decreased dependency may in turn help to reduce the midwife's experience of work-related

stress. This research project, using a brief questionnaire, aims to discover whether working with clients who have learned childbirth skills reduces work-related stress for midwives.

1.14. Summary

Today, most women in New Zealand choose a midwife to act as lead maternity carer. For most women, a specialist is to be consulted only if complications develop. While in general New Zealand midwives tended to lean towards the medical model of care, increasingly New Zealand midwives are encouraging women to aim for births that are less of a medical experience and more of a natural family experience, whether women give birth at home or in a hospital setting (Freeman et al., 2006; Vincent, 2008).

Miller (2002) describes how many UK women are overly dependent on maternity care providers. The consequence of overdependence on professional carers can lead to women relinquishing control resulting in women experiencing disappointment with themselves and their childbirth experience (Miller, 2002; 2003). Anecdotal practice evidence in New Zealand suggests that this is also the case for some women in New Zealand (Vincent, 2008). This overdependence can also lead to burnout for New Zealand midwives (McAra-Couper et al., 2014).

Berentson-Shaw et al. (2009) found that when women reported higher childbirth self-efficacy, they took a more active role in their labour and birth. They recommended that pregnant women should be provided with accurate and constructive information as well as tools which would enable them to manage their labours.

The developer of the birth preparation package (Lubell, 2008a; 2008b) trialled in this research project, *The Pink Kit Method for Birthing Better*® (Common Knowledge Trust, 2001), claimed to provide, in addition to information and tools, skills that were relevant to managing labour and delivery. Lubell's (2008a; 2008b) claims took the Berentson-Shaw et al. (2009) recommendation a step further by including the father. Lubell (2008a; 2008b) claimed the package provided him with relevant information, tools, and birth coaching skills. The package also appeared to address the issues raised by new mothers in the *First-time birth experiences study* (Howarth et al., 2011a; 2011; 2012; 2013). Taking personal responsibility and developing relationships through good communication were purportedly key concepts in the package. Lubell, (2008a; 2008b) also claimed the package was relevant for all types of birth as the safety of mother and baby was a prime consideration. Finally, it is claimed that mastering the skills provided in the intervention package will increase childbirth/childbirth coaching self-efficacy.

The trial aims to examine the effectiveness of the skills-based approach to childbirth/childbirth coaching preparation presented in *The Pink Kit Method for Birthing*

Better®, primarily to determine whether learning childbirth/childbirth coaching skills increases childbirth self-efficacy for mothers and fathers. Secondly, the trial aims to examine whether a skills-based approach benefits pregnancy anxiety at 36 weeks gestation, birth satisfaction, and parenting self-efficacy, family life satisfaction, and postpartum depression at six months for both parents.

The following chapter discusses two secondary outcomes of the trial - pregnancy anxiety at 36 weeks gestation and birth satisfaction.

Chapter 2 – Pre-birth and birth outcomes: pregnancy anxiety and birth satisfaction

2.1. Chapter overview

This chapter reports research on pregnancy anxiety and birth satisfaction. In particular, it examines the mother's perspective. It comments on influences that either inhibited or enhanced her experiences of pregnancy anxiety and birth satisfaction and their potential consequences. It also makes a brief, due to the limited published material available, examination of the fathers' perceptions and experiences. Owing to the limited research into childbirth experiences in New Zealand, research from other developed countries has been examined to gain some background in this area.

Due to methodological and ethical considerations, much of the research reviewed in this, and the following two chapters, is qualitative with the limitations and strengths noted in Chapter One. Despite these limitations, qualitative research does provide useful descriptions of the processes and experiences of a limited number of people from the target population. Correlational research, also with its limitations and strengths identified in Chapter One, contributes towards identification of potential relationships between various influencing variables as couples have a first child and experience early parenthood.

2.2. The mother's experience

Women have hopes and expectations of what their birthing experience will be like, and these expectations affect how they anticipate and approach the birth of their children (Ayers & Pickering, 2005; Gibbins & Thomson, 2001). Nevertheless, in a qualitative study using grounded theory methodology, Koehn (2008) reported that women were aware that the unexpected can happen. Pregnancy and childbirth is unpredictable. This, plus potential complications which may develop during pregnancy, may result in mothers suffering pregnancy anxiety. Potential complications during labour and delivery may also result in a negative experience of childbirth.

Lower pregnancy anxiety has been found to predict greater childbirth self-efficacy which in turn may positively influence birth satisfaction (Beebe et al., 2007; Carlsson et al., 2015). A positive perception of childbirth enhances a mother's transition to motherhood and is a predictor of parenting self-efficacy (Bryanton, Gagnon, Hatem & Johnston, 2008; Fowles, 1998; Koniak-Griffin, 1993). Negative childbirth experiences can be very stressful for the new mother and can have unfavourable consequences for the infant-mother relationship, a woman's attitude towards her role as mother, and how she behaves towards her infant in the role of primary carer (Mercer & Ferketich, 1990).

2.3. Mothers - Pregnancy anxiety

Using a questionnaire format, Huizink et al. (2004) investigated pregnancy anxiety in combination with general personality factors in 230 low risk nulliparous¹ pregnant women. All women taking part in the survey had a normal risk status. The study was prospective, longitudinal, used reliable questionnaires and objective (e.g. ultrasound) measures over six measurement periods. They concluded pregnancy anxiety was not the same as anxiety when not pregnant. Reck et al. (2013) also found that childbirth specific anxiety was a predictor of the length of labour while general anxiety had no effect. Ayers and Pickering (2005), in another prospective questionnaire study, reported that pregnancy anxiety could result in the mother feeling more fearful concerning her approaching childbirth. This could result in less personal control during labour and delivery. This may in part be explained by other research which has reported that facing a feared situation causes the release of stress hormones which can affect how the labour progresses, and this can result in longer more exhausting labours (Alehagen, Wijma, & Wijma, 2001; Reck et al., 2013).

Examining maternal pregnancy anxiety, Gunning (2008) emphasised that there are psychosocial² consequences as well as physical risks if pregnant women experience high levels of stress caused by pregnancy anxiety during pregnancy and labour. While moderate levels of worry may be helpful by stimulating active preparation for labour, increased stress hormonal levels in the mother's bloodstream can reduce the supply of blood available to the foetus. Gunning (2008) concluded that severe stress during childbirth was toxic to both the foetus and the mother and could result in the termination of the labour in favour surgical delivery. While making giving birth much safer for many women when complications develop, surgical deliveries as a result of severe stress can make a vulnerable birthing woman feel less satisfied with her birthing experience and herself (Bradley, 1996; Miller, 2003; Rijnders et al., 2008; Shannon et al., 2007).

Other research notes that fear was more predominant in first-time mothers who have yet to experience giving birth (Alehagen et al., 2001; D'Cruz & Lee, 2014). One of the ten participants in *First-time birth experiences study* was so fearful of the labour and birth process that she refused to think about it or make any other plans than to be totally reliant on her midwife to make all necessary decisions and to tell her what to do (Howarth et al., 2011a).

2.3.1. Pregnancy anxiety and labour and delivery pain

Vincent (2008) claimed that, in her practice experience as a New Zealand midwife, anxiety as a result of lack of labour management skills, especially pain management skills,

¹ a woman who has never given birth

² any perception of experience or behaviour which has the potential to impact on mental health and wellbeing

could result in an increased perception of the pain during labour. Huizink et al. (2004) reported empirical evidence that supports Vincent's (2008) claim. They concluded that fear worsened the perception of the pain experienced during labour and birth. They also concluded that this increased sensitivity to pain increased the fear, thus creating a spiralling increase in the pain perceived. This spiralling increase in perception of pain during labour may result in an even greater dependency on medical professionals (Klusman, 1975; Nilsson & Lundgren, 2009).

Several studies have found that non-medication strategies for managing pain have contributed towards reducing pregnancy anxiety. Forty-two primiparas³ in their third trimester, attending one of two childbirth preparation groups (a controlled trial but participants were not randomly assigned), answered questions related to pregnancy anxiety (Klusman, 1975). The Childbirth Education Association classes (experimental group) taught pregnant women various labour and delivery techniques including postures, exercises, and breathing techniques. The Red Cross prenatal classes, which taught predominantly baby care and gave some information about labour and delivery, acted as a control. Klusman (1975) wanted to know whether teaching labour and delivery techniques would reduce primiparas' perception of pain during labour and childbirth. Analysis of variance found that the experimental group showed reduced anxiety compared to the control group. Primiparas in the experimental group, who felt less anxious, also rated the pain they experienced during the transition stage of labour as significantly less than those in the control group. Groups were similar in demographics except for husbands in the experimental group who had an education level 2.5 years higher than those in the control group. These husbands were more likely to have professional careers suggesting higher socio-economic status. This may have indicated that couples in the experimental group were more proactive in searching for and better able to pay for childbirth preparation classes which they felt would give them greater control during labour and delivery. This may have impacted on results obtained.

However, using an active coping technique with distraction as a control, Leventhal, Leventhal, Shacham, and Easterling (1989) monitored and coached labouring women through their contractions. They also found that active coping was significantly more useful in helping women reduce negative moods and cope with their labour pain than was distraction. This finding gives support to that of Klusman (1975).

Markman and Kadushin (1986) examined two different approaches to childbirth preparation, using participants from two pre-established groups. The group which offered Lamaze Method training was the experimental group. A comparable group was selected to

³ First-time mothers

offset potential issues created by the self-selection of the group completing the intervention. Markman and Kadushin (1986) found that an antenatal education intervention teaching management strategies such as the Lamaze Method reduced the perception of pain experienced during labour.

Not all women choose to manage pain using non-medication strategies. There are many options for pain relief during labour and delivery, including medications such as pethidine. Complete blocking of pain is possible using epidural analgesia (O'Sullivan, 2009). In a study examining the impact of epidural analgesia on nulliparous women's fear, pain, length of labour, and stress hormones, Alehagen, Wijma, Lundberg and Wijma (2005) collected baseline data from urinary and salivary samples (during 37-39 weeks gestation). This was followed by hourly sampling to measure hormones and completion of Delivery Fear Scale (Wijma, Alehagen & Wijma, 2002) along with a pain intensity scale during labour. They reported that fear of pain and pain levels were highly correlated, leading to the assumption that reduction in either will decrease the other.

2.3.2. Pregnancy anxiety and personal control during labour and delivery

In an article based on a small scale longitudinal qualitative study, Miller (2003) conducted an in-depth exploration of the potential consequences of a first-time mother's interaction with medical professionals in a medical model of maternity care. Seventeen participants, white English mothers who were all employed at the time their pregnancies were confirmed, shared their narratives of first-time motherhood. Miller (2003) maintained that reliance on expert knowledge and opinion as a consequence of fear of what may go wrong may lead to a culture of dependency on the maternity care provider. This dependency may result a woman relinquishing personal control by handing control over her birthing process to the maternity care provider and the expert. New Zealand midwife Vincent (2008) supported this assumption.

Handing over personal control of her birthing process to the professionals because she lacks the confidence to manage herself may have unwanted consequences for the mother (Bradley, 1996; Lothian, 2008). One possible consequence was an increase in anxiety as a result of the mother's fear that she may not be able to cope. The stress accompanying such anxiety has the potential to result in a stalled labour and may contribute towards the necessity for a surgical delivery (Gunning, 2008). Such consequences have the potential to decrease the first-time mother's birth satisfaction (Cheung et al., 2007; Fowles, 1998; Lally et al., 2008). However, researchers have reported that women who experienced higher childbirth self-efficacy also demonstrated reduced pregnancy anxiety (Beck & Siegel, 1980; Beebe et al., 2007; Byrne et al., 2014; Ip et al., 2009; Sieber et al., 2006).

2.4. Mothers - Birth satisfaction – a New Zealand pilot study

Various phenomena contribute towards experiencing a sense of birth satisfaction. The pilot study, *First-Time Birth Experiences within the New Zealand Midwifery Driven Maternity System* (Howarth, 2010) identified the following themes as linked to birth satisfaction in mothers:

- taking personal responsibility (Howarth et al., 2011a)
- important relationships during pregnancy and birth (Howarth et al., 2011b)
- the availability of a safety net (Howarth et al., 2013)

The theme *taking personal responsibility* referred to the woman choosing to be in charge of, and accountable for, her own process. Embedded within this theme were the subthemes: information seeking; personal adjustment and *childbirth preparation*; desired birth option; environment and atmosphere; and personal control during labour and delivery which included informed decision making and pain management.

The theme *important relationships during pregnancy and birth* concerned the importance of the establishment of a personal and caring relationship with whomever was offering the participant support and maternity care. This theme incorporated subthemes: continuous support throughout labour and delivery; family and other support people; partner inclusion and involvement; the midwife relationship; the lack of relationship with maternity medical professionals; and conflict between midwives and maternity medical professionals.

The theme *the availability of a safety net* reflected the woman's concern for the safety of herself and her unborn baby. This theme included the subthemes: looking after self and keeping unborn child safe; the importance of midwife skills; the availability of a hospital facility and its resources; and the availability of medical expertise and intervention.

Experiencing a sense of control over her labour and birthing process, well managed pain, warm and caring support, and confidence that expert assistance was available if required all contributed towards the mother's perception of birth satisfaction (Howarth et al., 2011a; 2011b; 2012; 2013). If expectations for a good experience of childbirth were met and she felt alert and able to interact immediately with her infant, her sense of birth satisfaction was increased (Howarth et al., 2010). When she felt well prepared so that she anticipated childbirth with confidence without fear, her childbirth self-efficacy was increased, further adding to her perception of birth satisfaction (Howarth et al., 2011a).

2.4.1. Taking personal responsibility

The New Zealand *Maternity Services Consumer Satisfaction Survey Report* (Ministry of Health, 2008) highlighted the importance of women being given comprehensive information and good advice about pregnancy, labour and delivery. This information assisted them to

make adjustments for impending motherhood, and to prepare for childbirth (Howarth et al., 2011a). Maternity professionals, including midwives, were important sources of reliable information about pregnancy, labour and birth (Miller, 2003). Howarth et al. (2011a) reported that friends, family, books and the internet were also used by women to gather information. Reading about and hearing other people's birth experiences were also considered an important part of childbirth preparation. Munro, Kornelsen, and Hutton (2009) suggested that both positive and negative birth stories were persuasive in influencing a woman's choice of mode of birth, as birth stories carried an authority due to the personal experience of the woman telling her story. Miller (2003) reported that women also collected information from antenatal classes.

Inadequate information could impact negatively on a mother's birth satisfaction. Being sufficiently knowledgeable about childbirth was a contributing factor towards a woman's childbirth self-efficacy (Beck & Seigel, 1980; Berentson-Shaw et al., 2009; Bradley, 1996; Goodman et al., 2004). Being knowledgeable enabled her to make informed decisions throughout labour and delivery and assisted her to make choices about pain management. Women interviewed by Gibbins and Thomson (2001) said that positive support from both midwives and partners, which included information giving and recognition that women could be actively involved in decision making, assisted them in maintaining a sense of personal control.

Women who completed the New Zealand *Maternity Services Consumer Satisfaction Survey* (Ministry of Health, 2008) reported that adjusting to and preparing for impending motherhood included *childbirth preparation*. Manning and Wright (1983) supported the benefits of childbirth preparation such as those advocated by obstetrician Bradley (1996) who strongly recommended skills preparation for natural childbirth. To ensure a woman and her partner had the best possible chance of having a natural birth, Bradley (1996) argued that the birthing woman needed to understand what was happening to her body during the birth process. This insight, when combined with various birthing skills, gave her the knowledge to work with her baby's efforts to be born rather than against them. Beck and Siegel (1980) concluded that the confidence that comes from effective preparation has positive effects on how women cope during labour and delivery. The knowledgeable and skilful woman was not fearful and anxious. Goodman et al. (2004) found that childbirth preparation resulted in a higher overall satisfaction with the birthing experience.

Where she gives birth, when choice was available, reflected a woman's individual needs (Howarth et al., 2013). While some women chose to give birth in hospital others preferred the more familiar environment provided by home birth. Boucher, Bennett, McFarlin, and Freeze (2009) found that a desire for a familiar environment was one of the

reasons given by American women for choosing to stay home to give birth. However, women who elected to give birth in hospital were also concerned about the environment and attempted to make the clinical looking rooms more homelike with personal belongings. Atmosphere and environment were very important to the majority of these women, a finding that is supported by French obstetrician Odent (2001). In his practice Odent (2001) created warm and personalised environments in which women could give birth.

A mother's sense of control during labour was achieved through confidence in her ability to make choices that were actively responsive in managing her birthing process as a result of taking personal responsibility to be prepared (Green, 1999; Howarth et al., 2011a). Indeed, Campero et al. (1998) claimed that control was the *key component in a satisfactory labor process* (p. 397). Making informed decisions was considered very important if women were to experience a sense personal control (Campero et al., 1998; Gibbins & Thomson, 2001; Goodman et al., 2004; Green, 1999; Hodnett & Simmons-Tropea, 1987).

Labour pain management has been found to be another important aspect of personal control (Manning & Wright, 1983). Childbirth is likely to be one of the most painfully challenging things a woman will ever experience (Karlsdottir, Halldorsdottir, & Lungren, 2014; Lally, Murtagh, Macphail, & Thomson, 2008). Inability to manage, or being overwhelmed by her pain, can lead to loss of control and loss of engagement with the birthing process and this can put a woman at risk of having a negative birth experience (Ayers & Pickering, 2005; Martin & Fleming, 2011; Rijnders et al., 2008; Lally et al., 2008). Those women who experienced a sense of personal control throughout their birthing experiences had faith in their abilities to manage contraction pain (Goodman et al., 2004). Severe labour pain and subsequent loss of control have been shown to be risk factors for low levels of satisfaction (Waldenstrom, et al., 2004). Should fear of and inability to manage pain result in a stalled labour or become a contributing factor towards a surgical delivery, birth satisfaction is likely to be lower still (Lally et al., 2008). Women who retained a sense of personal control throughout the childbirth experience expressed a higher level of birth satisfaction (Gibbins & Thomson; 2001; Green, 1999; Waldenstrom, et al., 2004).

2.4.2. Relationships during pregnancy and childbirth

How a woman is supported and cared for during her labour and birth impacts on her childbirth satisfaction (Gibbins & Thomson, 2001; Rijnders et al., 2008). It can have lasting implications. Women have expressed the need of warm and caring support which gave them a sense of reassurance and comfort during labour and delivery (Halldorsdottir & Karlsdottir, 1996; Howarth et al., 2011b; Williams, Lago, Lainchbury, & Eagar, 2010). Sauls (2002) suggests that, throughout history, this need had been met through the tradition that familiar

women assisted women during their labours and deliveries. However, the increasing medicalization of childbirth saw more and more women giving birth in hospitals under the care of professionals rather than in the family home.

Research has confirmed that some of the most important risk factors for negative birth experiences are social factors, including relationship issues with important others such as the partner and extended family members (Martin & Fleming, 2011; Waldenstrom, Hildingsson, Rubertsson, & Radestad, 2004). Over a period of 20 years, Rubin (1984) collected nurses' field notes for over 6000 participants from university teaching hospitals (Chicago and Pittsburgh). Rubin (1984) was concerned with how women felt about themselves during pregnancy, labour, and delivery. She had a particular interest in the early postpartum days⁴. Qualitative methodology was used to analyse this data plus her own observations. She then obtained feedback on her analyses from the women concerned. This enabled Rubin (1984) to distinguish recurring themes which indicated women went through developmental stages to establish their maternal identity, one of these being acceptance of the pregnancy by significant others. This led her to theorize that without acceptance and support from important others throughout pregnancy, childbirth, and in the early stages of her role as mother, bonding with the child became difficult and in some cases, may not occur.

Rosen (2004) conducted a systematic search of relevant literature to determine the effectiveness of different types of support persons and to identify, if possible, the type of caregiver that was best able to support women through childbirth. Published articles examining childbirth outcomes which met the following selection criteria were examined: published in English between 1980 and 2003; RCTs or prospective nonrandomized studies; intention to treat analysis used, or low attrition satisfactorily explained; comparison of group with support to one without; support person identified; continuous support was used as an independent variable; and maternal outcomes and satisfaction along with infant outcomes were examined. The search for relevant literature initially identified 284 articles which examined the impact of unfamiliar untrained, and trained lay women (doulas), female relatives, nurses, and lay/student midwives (acting only as support persons). However, only eight met all her selection criteria. From her systematic review of the results of these eight articles, Rosen (2004) inferred that continuous support from untrained lay women gave the most beneficial results for childbirth outcomes. However, due to the limited number of reports that she examined, she also recommended caution before drawing firm conclusions and suggested that more RCTs were necessary before such conclusions could be made. It must also be noted that none of the articles she examined assessed the effectiveness of the

⁴ first 6 weeks postpartum

partner as a support person.

In a seminal study, Sosa et al. (1980) randomly assigned doula support to 50% of birthing women in a Guatemalan hospital. A doula is a trained or lay woman who is available to support a woman emotionally and in other non-medical ways throughout the birthing process (Scott, Berkowitz, & Klaus, 1999). To be one of the 20 women included in each group for the Sosa et al. (1980) study, births needed to be without problems requiring medical interventions. To attain 20 members for each group, 103 women had to be randomly assigned to the control group and 33 to the experimental (doula) group. This in itself is indicative of the value of doula support, as problems were only identified once labour had begun and the intervention was underway. In the final analysis, those women who had the continuous support of a doula throughout labour and delivery had shorter labours (an average of 8.8 hours compared to an average of 19.3 hours for the control group) and significantly lower rates of perinatal problems such as caesarean section and meconium staining. They also interacted sooner with their infants.

In a qualitative study conducted in Mexico, Campero et al. (1998) interviewed two groups, each of eight women, to explore their immediate postpartum perceptions of their birth event. One group had had the support of a doula, who was one of seven retired nurses, and the other group was composed of women who gave birth following normal Mexican hospital routine in which this support was not available. Women reported that medical staff tended to communicate between themselves without including the woman concerned. The doula enabled women in the doula group to communicate concerns and ask questions, as the doula provided a connection between the woman and the medical staff. The women also became more involved in their own birthing processes because the doula was constantly available to appropriately assist them at each stage of the labour and delivery. Women with doula support found their pain easier to bear and felt more positive about themselves and how they had coped than did women in the control group. Women said:

[...] the doula helped them to keep calm and to think positively and they felt a greater sense of participation and a higher self-esteem (p. 400).

Following an intervention in which 21 pregnant teenagers participated in a programme providing social support, Dunst, Vance, and Cooper (1986) concluded there was enough correlational evidence to suggest that social support could act as a buffer against stress and therefore have a direct impact on a mother's health and maternal performance. Later researchers supported this conclusion. Having someone available to offer continuous emotional, informational, and physical support from the onset of labour until after the delivery significantly reduced tension and assisted women to retain a sense of being in

control of their birthing processes (Glazier, Elgar, Goel, & Holzapfel, 2004; Hodnett, 2002; Hodnett, Gates, Hofmeyr & Sakala, 2005; Williams et al., 2010). As well as increasing confidence and active participation in their own process, continuous support reduced women's analgesia use. A warm, supportive and encouraging midwife who created a calm environment, plus a supportive partner, better enabled a woman to cope with and manage her pain (Huber & Sandall, 2009; Karlsdottir, Halldorsdottir, & Lungren, 2014; Leap, Sandall, Buckland, & Huber, 2010). In another qualitative study, eight English women expecting their first babies also commented that positive support from both partners and midwives assisted them in maintaining a sense of personal control throughout their birthing processes (Gibbins & Thomson, 2001). Medical interventions were reduced, women had significantly shorter labours, and babies had higher Apgar scores⁵ (Campbell et al., 2006). Mothers receiving continuous support also took less time to develop positive relationships with their infants compared to mothers who were provided with routine maternity care only (Bruggemann et al., 2007; Campbell et al., 2006; Hodnett et al., 2005). Campbell, Scott, Klaus, and Falk (2007) also found the mother was more likely to breastfeed her infant. Rosen (2004) had found that earlier research had also consistently supported findings that continuous support offered numerous benefits for mothers and infants.

Today more and more men are present for the birth of their babies. Using their own words, Icelandic women described their vulnerability while in labour and their need for support and caring from those close to them in words such as:

He didn't have to do anything or say anything, just that he was present ... that he was there to experience this with me. That was extremely important (Jean, 33, mother of four as cited by Halldorsdottir and Karlsdottir, 1996).

When her partner tried to understand and showed his love for the mother, when he was able to communicate well with her and encourage and reassure her, when he facilitated decision-making between her and medical personnel, and when his support made her feel she was not alone, Turkish women felt better able to cope (Gungor & Beji, 2007). Obstetrician and author Robert Bradley (1996) claimed that in his practice, when the partner had been the one to offer continuous emotional, physical, and informational support, the mother was more likely to have a natural birth. He reasoned that because of his relationship with the mother, the partner was the ideal person to offer continuous support. Participants in the pilot study for the present study supported this argument with one commenting:

⁵a checklist comprised of 5 elements - heart rate, respiratory effort, muscle tone, reflex irritability, and colour. Each is scored either 0, 1, or 2 giving a possible total score of 10. It is used to report the condition of the newborn and its response to resuscitation. (American Academy of Pediatrics, 2006)

[...] they're [fathers] half the whole process you know (Howarth et al., 2011b, p. 8)

The trust women placed in their midwives gave them a sense of security and reassurance (Howarth et al., 2011b). Women were looking for a close and personal relationship with their midwives in which they felt comfortable with each other. Such relationships played an important part in contributing towards a sense of birth satisfaction. However, while the New Zealand midwife offers lead maternity care to her clients, midwives are not generally able to guarantee the provision of continuous support throughout the entire labour. While she may be continuously there for the later stages of labour, that too will depend on the potentially conflicting needs of other clients. In such a situation she may need to divide her time between the two clients. However, Howarth et al. (2011b) found that despite the possibility the midwife may not be continuously available, the relationship with the midwife that was established during pregnancy was important for the client's sense of wellbeing during labour and delivery. There is also a wealth of data suggesting that a woman's relationship with her midwife will also moderate her experience of pain (Lundgren & Dahlberg, 2002).

While New Zealand women were able to develop close personal relationships with their midwives, this was generally not possible with maternity medical professionals who were usually only called to assist when complications had arisen (Howarth et al., 2011b). Women can find unfamiliar people difficult to cope with during such a personal experience as giving birth. Some of women felt that the detached approach of unfamiliar medical personnel made their birth experiences feel quite impersonal and uncomfortable (Howarth et al., 2011b). However, childbirth complications do develop. When this does happen, having positive relationships between all maternity professional carers, including midwives and obstetricians, was reported as important to women in the *Maternity Services Consumer Satisfaction Survey* (Ministry of Health, 2008). Howarth et al. (2012) also found that tension between maternity carers caused distress to women and this detracted from their satisfaction with their childbirth experiences.

2.4.3. Having a safety net

Safety of themselves and their babies was an issue for mothers from the time they were aware of their pregnancies. They modified their behaviours and searched out carers whose skills gave them the confidence to feel safe (Howarth et al., 2011a; 2011b; 2013). The availability of a hospital facility and its resources along with the availability of medical expertise added to that sense of feeling safe (Howarth et al., 2013). Women were aware that complications could develop at any stage of their pregnancies, labours, deliveries and post

birth.

Long labours, unexpected medical interventions such as induction and emergency caesarean sections, obstetric injuries, and concerns for baby's welfare, were all challenging experiences. This made them potential risk factors for women perceiving their birthing experiences negatively (Martin & Fleming, 2011; Svardby, Nordstrom, & Sellstrom, 2007; Waldenstrom et al., 2004). It cannot be denied that the medical profession has saved the lives of mothers and babies which would once have been lost. However, women wanted to be kept informed so that they could feel sure that any recommended medical interventions were necessary and safe (Howarth et al., 2011a).

In a large longitudinal cohort study involving 2541 Swedish women, Waldenstrom et al. (2004) appraised their experiences of labour and delivery. Questionnaires were completed after they had booked for antenatal care, then at two months post birth, and finally at one year post birth. To ensure mothers were no longer experiencing early euphoria, the halo effect⁶, leading to positive emotions, the outcome measure *labour and birth experiences*, was examined in the one-year questionnaire. Waldenstrom et al. (2004) wished to avoid this effect and expected that by one year the mother's perception of her experience would have stabilized. They reported that seven percent of women indicated they had had a negative birth experience. One of the four risk factors identified was unexpected medical problems such as induction and emergency caesarean deliveries.

Although Waldenstrom et al. (2004) may have avoided the potential halo effect by delaying this questionnaire until one year post birth, they were also asking women to report retrospectively and responses may have been affected by memory issues. Also in need of consideration is the finding by Swain-Campbell, Surgenor, and Snell (2001) who reported that a positive response is typical of satisfaction surveys. Consequently, it may be that the figure of seven percent is not totally accurate. It may be higher. Van Teijlingen et al. (2003) also found that most women tended to report satisfaction with their birth experience. Thus, they added a cautionary note that such surveys need to be interpreted with care.

In their report for the World Health Organisation, Maine et al. (1997) offered a formula for determining the acceptable level of caesarean sections as a proportion of all births. They concluded that the minimum acceptable level of caesarean sections was five percent of all births to ensure all women who needed such care got it, while the maximum acceptable level was 15% of all births. The latter half of the twentieth and beginning of the twenty-first centuries have seen the rate of caesarean sections increase progressively over this limit (Lavender et al., 2012).

⁶ a cognitive bias in which the tendency for an impression created in one area influences opinion in another, for example, the safe arrival of baby may influence the mother's perception of her childbirth experience

The New Zealand Ministry of Health (2015) Report on Maternity stated that in 2012, two thirds of all women giving birth had spontaneous vaginal births, with approximately three percent of these women having successful homebirths. Approximately eight percent of New Zealand women giving birth in 2012 had some form of assisted birth other than caesarean section, including induction, augmentation, epidurals, episiotomies, forceps and ventouse (vacuum extraction) deliveries. On average, one in four women had caesarean sections, often combined with other interventions such as induction, augmentation and epidurals. An examination of New Zealand's data for caesarean sections revealed that in 1980 (NZ statistics available since 1980), out of 50,542 live births, 1,156 (just over two percent) caesarean sections were performed, while in the year 2000/2001 out of 56,202 live births the total for caesarean birth had risen to 11875 (just over 21%) caesarean sections, a ten-fold increase in 20 years (NZHIS, 2008). The percentage of caesarean sections continued to increase between 2001 and 2012. By 2004, 23.7% of births were by caesarean section while in 2012, approximately 25% of all women giving birth in New Zealand did so by caesarean section (Ministry of Health, 2015).

While there was an increase in the ratio of elective caesarean sections resulting in a slight decrease in spontaneous vaginal births between 2003 and 2012, the ratio of women having an emergency caesarean section or assisted birth varied little over this time period (Ministry of Health, 2015). One report found that approximately 40% of caesareans were classified as elective in the National Minimum Dataset (NMDS) (NZHIS, 2008). Unfortunately, the statistics do not delineate which of these elective caesarean sections were the result of previous or existing medical issues and therefore considered a medical necessity. This appears to give support for Klein's (2004) report that the numbers of women undergoing caesarean section for non-medical reasons is not yet known.

There appear to be a number of factors that potentially explain why there has been an increase in caesarean sections in New Zealand since the 1980s. Firstly, there is a trend for first-time mothers to be older than in previous generations. In 1980, the average age of a mother giving birth for the first time in New Zealand was 25.3 years, while in 2009 she was 30.5 years (Statistics New Zealand, 2015). Smith et al. (2008) claimed that the decreasing ability of the smooth muscles in the uterine wall to contract as a result of the aging process slows down labour with the result that a caesarean section may become necessary. Secondly, there has been a corresponding increase in caesarean sections related to the increase in rates of obesity which increases the pregnant woman's probability of encountering problems throughout both pregnancy and childbirth (McGowan, 2009). Thirdly, New Zealand midwife Vincent (2008) contends that maternity care has become a:

[...] fear based practice [...] fear of review of practice, the Health and Disability Commissioner/litigation (Vincent, PowerPoint slide 4, 2008).

Vincent (2008) argued that fear of what may happen during a difficult birth means judgements made by medical staff are not based solely on sound clinical practice. However, Exton (2008) disagreed. Instead, she claimed that midwives, who lack medical training, fail to recognise the early stages when things are going wrong. This delay resulted in medical intervention becoming the only option for the obstetrician if mother and child were both to survive. This discord between midwives and obstetricians is unfortunate and makes working together difficult, another cause of stress for the parents with the potential to cause stalled labour (Howarth et al., 2012).

Averting labour and birth pain, safety for the baby, less pelvic floor damage for the mother, and convenience, are the claimed benefits of a planned caesarean delivery (Klein, 2004; Lavender et al., 2012). However, a caesarean section is major surgery (Durik, Hyde, & Clark, 2000). It increases the risk of haemorrhage, infection, anaesthetic complications, cardiac arrest, and hysterectomy (Liu et al., 2007). As well, it takes longer to heal than a vaginal birth. Several studies revealed a significant and debilitating effect of maternal fatigue which plagued some mothers who had a caesarean section for as long as four years after the birth (DiMatteo et al., 1996; Garel, Lelong, Marchand, & Kaminski, 1990). A previous caesarean delivery also increased risk factors for subsequent births. Uterine scar rupture, low birth weight, still birth, placenta previa⁷, placenta accreta⁸, prolonged labour, and necessity for a second caesarean all increase in risk (Kennare, Tucker, Heard, & Chan, 2007; Lavender et al., 2012). Women who had caesarean sections tended to have more difficulty conceiving and gave birth to fewer subsequent children (Garel et al., 1990).

As well as the physical risks, surgical deliveries also increase the risk of negative psychosocial outcomes for the women (Lavender et al., 2012).

Studies of women who have had a caesarean paint a picture of disappointment, distress, and dissatisfaction with this method of delivery (Lobel & DeLuca, 2007, p. 2280).

A systematic literature review culminating in a meta-analysis of 43 empirical studies on caesarean birth and its effect on a total of 23 psychosocial outcomes was conducted by DiMatteo et al. (1996). Papers accepted met stringent criteria: English language publications through to 1993; relevance to psychosocial issues in childbirth; birth methods clearly identified for each participant – vaginal birth or caesarean delivery; sample size provided; no confound

⁷ placenta covers the cervix partially or completely

⁸ placenta attached directly to the muscle of the uterine wall

identified (e.g. intensive care of infant); two groups compared on the dependent variable; paper contained means and standard deviations or appropriate statistics for the meta-analysis; paper provided information so an effect size could be computed; and if required statistical information was not included in the published paper, inclusion depended on first authors making appropriate statistics or raw data available. DiMatteo et al. (1996) found that women who had a surgical delivery felt significantly less satisfaction both short term and long term with their birthing process than those who had had a spontaneous vaginal delivery. This conclusion supported the earlier findings of Padawer et al. (1988). DiMatteo et al. (1996) confirmed that women who had caesarean sections waited longer periods after the birth for their first interactions with their babies, and had less positive initial reactions to their babies. They played less with their babies, and offered them less stimulation for the first six weeks once they had both returned home, compared to mothers of babies not delivered by caesarean section.

Other researchers have also found that mothers who had caesarean sections felt less confident in their abilities to effectively mother their infants (Durik et al., 2000). Because a baby is programmed to begin bonding and interacting with its mother immediately after birth, Klaus (1998) claimed that when the mother is less interactive with her baby, and offers less stimulation, bonding may be delayed. Nelson (2004) and Rosen (2004) both surmise that lack of confidence and childbirth satisfaction could enhance the difficulties a mother may experience in establishing a positive, interactive and reciprocal relationship with her.

If the caesarean was unplanned, the psychosocial consequences experienced by mothers were more marked (Blomquist et al., 2011; DiMatteo et al., 1996). In the absence of clearly defined medical conditions which necessitate medical interventions, vaginal birth is regarded as a safer option both physically and psychologically for both mothers and babies (Klein, 2004). The findings of these researchers all give support to the opinion that when handing over control results in a surgical delivery, it becomes important to be sure that the intervention was really warranted.

2.4.4. Other factors influencing birth satisfaction

Women often enter childbirth with unrealistic expectations (Lally et al., 2008; Miller, 2007). When outcome matches a woman's expectations of how her labour and birth will progress, her satisfaction with her birth experience is enhanced (Goodman et al., 2004; Manning & Wright, 1983). However, many more women struggle with childbirth than those whose pregnancy is concluded by a surgical delivery. They may have endured long and painful labours that ended in some form of medical intervention. Many of these women may have been given medications to control their pain, both before and throughout these medical

procedures, which immediately post birth left mother and baby too sleepy to engage (Bradley, 1996; Klaus, 1998). One woman said:

I hated being so drugged up because when my daughter was born, I didn't want to hold her. I just wanted to sleep (Fowles, 1998, p. 238).

Women have expressed dissatisfaction with these medical procedures for which they felt ill prepared (Fowles, 1998).

Lack of information, use of medications, lack of respect, and negative interactions with, and between medical personnel, were also described as experiences that created negative perceptions of the birth event (Avortri, Beke, & Abekah-Nkrumah, 2011; Fowles, 1998; Howarth et al., 2012; Martin & Fleming, 2011; Nelson, 2004). Lack of understanding of the actions taken by medical personnel was a frustration expressed by women giving birth. One woman remarked:

I was induced and I wish the labor started on its own (Fowles, 1998, p. 238)

and another:

I had back labor and the nurses would not let me lay on my side because of the monitor (Fowles, 1998, p. 238).

and another:

It was just a, a very horrible, stressful situation where I was in labour [...] and two doctors and [midwife's name] and, and this complete conflict of advice [...] and, you know, wanting to follow the best advice and keep everybody happy [...] it was just a lot of pressure, you know, a very stressful situation at a stressful time (Howarth et al., 2012, p. 432)

Such findings are of concern when research has revealed the negative impact such experiences may have on a woman's perception of her childbirth experience. This concern increases when it is taken into consideration that women can suffer post-traumatic stress disorder as a consequence of their birth experiences (Ayers, Wright, & Wells, 2007; Soderquist, Wijma, & Wijma, 2002; Wijma, Soderquist, & Wijma, 1997). Tham, Christensson, and Ryding (2007) reported that 34% of 122 Swedish women who had undergone an emergency caesarean section described the birth as a traumatic experience. This, added to the realisation that many more women endured birthing processes that did not meet their childbirth expectations, is troubling.

Unmet childbirth outcome expectations, especially if combined with a difficult post-partum recovery, create potential risk factors for birth satisfaction and the development of

maternal identity (Nelson, 2004). The new mother may be left confused as to why her birth experience went wrong and she may feel she was at fault in some way, that she failed. Miller (2007) was worried that this sense of failure may result in the mother questioning her expectations of what the role of mother entails and leave her unsure of how to behave. This is a concern because despite research that demonstrates the difficulty inherent in becoming a mother, postpartum maternal wellbeing is frequently neglected by health professionals (Walker & Wilging, 2000).

Using an interview format, Callister (2004) encouraged women from culturally diverse areas, including Asia, the Pacific Islands, the Middle East, Scandinavia, South Africa, and North and Central America to share their birth stories. They were asked to express their fears, feelings of inadequacy, and any disappointments they experienced when their children were born by. This format allowed the interviewer to observe participants and encourage them to explain any comments felt to be ambiguous. While there are benefits to be had from cross-cultural studies, Callister (2004) does not share how many women were interviewed for this study as a total, or from each cultural area. Nor does she report who did the interviews and whether a standard procedure was followed. Brief details about individual women from whom comments were taken gave some idea of the cultural differences experienced by these mothers, but the reader is left wondering whether this woman was the only woman representing her cultural background and how typical her situation and experience was. However, the method of analysis was appropriate for this type of study and the cross-cultural similarities in experiences and feelings the women reported gave it strength. The conclusion that giving women the opportunity to talk about their childbirth experiences helped women to successfully integrate their feelings into their maternal identities is both a logical and valuable finding. It has value in providing a basis for a therapeutic intervention, particularly for those women who had negative childbirth experiences and who were struggling to adapt to their new role. Such an intervention could be of value for enhancing family wellbeing.

2.5. The father's experience

While progressively more research is determining the importance of the father's involvement in the pregnancy and active participation in the birth of his child, both for his own wellbeing and for the wellbeing of his partner, it is still limited (Gungor & Beji, 2007; Halldorsdottir & Karlsdottir, 1996; Howarth et al., 2011b). A search of the literature failed to identify any study which examined the first-time father's experience of the birth of his child in New Zealand. Internationally, there are a limited number of papers which outline the father's anticipation of, and experience of, the birth of his child. However, the majority of these

have focused predominantly on the father's support role during childbirth (Hildingsson, Cederlöf, and Widén, 2011). Johansson, Fenwick and Premberg (2015), conducted a qualitative meta-synthesis of how 120 fathers experienced childbirth, including spontaneous and assisted vaginal deliveries, and caesarean deliveries. They found only eight studies that met criteria for inclusion: articles written in English; articles published in peer-reviewed journals from 2000; and which reported a qualitative study specifically exploring the father's experience of childbirth. There were four from Sweden, two from England and one each from Malawi and Nepal. This reveals the lack of representative international reports published on fathers' experiences of childbirth.

2.5.1. Cultural shift in expectations of fathers in the Western World

Research reveals that the Western World has seen social and cultural shifts in the role of fatherhood (Johnson, 2002). In a qualitative study of what the transition to parenthood meant, Barclay and Lupton (1999) concluded that for first-time fathers, becoming a father involved changes in both his self-identity and his personal relationship with his partner. In addition, Henwood and Proctor (2003) concluded that a father is expected to work with his partner as part of a childcare team. Barclay and Lupton (1999) found that men must address complex and evolving emotions in their transition to fatherhood. This process began with the advent of their partner's pregnancy followed by the father's experience of childbirth.

Johansson et al. (2015) concluded that while many of the fathers in the eight studies they included in their qualitative meta-synthesis were committed to being involved in the mother's labour and delivery, they felt vulnerable and in need of preparation and support. Johansson, Rubertsson, Rådestad, and Hildingsson (2012) reported that for fathers, childbirth was emotionally demanding and often left them feeling uncomfortable. Other studies have observed the father's disconnect from the childbirth process, their feelings of isolation when ignored by medical professionals, and their perception that the role of father begins with childbirth (Fenwick, Bayes, & Johansson, 2012; Johnson, 2002; Longworth & Kingdon, 2011). Still other studies have found that lack of social support, high levels of neuroticism, and a tendency to trait depression affected men negatively during pregnancy and childbirth (Boyce, Condon, Barton, & Corkindale, 2007; Greenhalgh, Slade, & Spiby, 2000). Deave, Johnson, & Ingram (2008) concluded that men had issues similar to those of their partners, including the need for support mechanisms, for information, especially information about breast feeding, how to care for a baby, and the changes they can expect in their relationships with their partners after the child was born.

2.6. Fathers - Pregnancy anxiety

While no paper was located that specifically addressed the issue of pregnancy anxiety for fathers, several papers did discuss different fears fathers experienced after pregnancy was confirmed. Before the child is born, men are often stressed because they are unsure of their childbirth role but are driven to be present by their perceptions of cultural expectations (Johnson, 2002). A recent Swedish study in which eight fathers were interviewed in depth to explore their experiences of planned home birth illustrates some of these fears related to labour and delivery choices (Lindgren & Erlansson, 2011). These fathers had experienced 17 home births out of a total of 23 births. Through content analysis, Lindgren and Erlansson (2011) identified one major theme “she leads – he follows” which had the subthemes: being a compliant father; making a sensitive decision; and making a deliberate choice to have a homebirth. Being a compliant father involved: offering the mother physical and psychological support; going along with the woman’s homebirth decision, despite any personal anxieties; and feeling relief that he could avoid the distress of driving a woman in labour to an unfamiliar environment. Making a sensitive decision included: being responsible by informing himself of potential risks and the safety net hospital resources provided if complications arose; achieving continuity in care through knowing the midwives who would be present; and feeling trust in the midwife’s confidence the mother could achieve a homebirth. Making a deliberate choice to have a homebirth incorporated: the concepts that childbirth is natural and is experienced as a more natural event at home than it is in hospital; that parents can be in control of the environment rather than feeling compelled to follow others’ protocols; and a sense of being different from others parents giving birth in a more medicalised environment.

For some fathers, Lindgren and Erlansson (2011) found that this sense of feeling different created anxiety for fathers because they were aware that they could not control the actual childbirth process. Fathers felt that their choice had challenged mainstream health care providers who had not given them information about homebirth as an option. They also thought that the health care providers offered them little support and understanding. They commented that this left them feeling marginalised and fearful about the choice they had made. However, Hildingsson et al. (2014) surveyed 1047 expectant fathers in Sweden using the Fear of Birth Scale. They concluded that around 14% of men experienced fear of childbirth regardless of chosen birth environment. They were concerned that this fear was later associated with a negative birth experience.

While men expressed excitement and joy about the impending birth of a first child, they also expressed fear about becoming a parent as they felt underprepared and unsure of the expectations their partners may have of their role (Deave, Johnson, & Ingram, 2008; Hildingsson et al., 2014). Boyce et al. (2007) surmised that providing men with more

information regarding pregnancy, childbirth, and parenting could be a positive step in assisting these men to overcome their anxieties.

2.7. Fathers - Birth Satisfaction

As for the mother, the birth of a child is a major event for fathers. In a survey of 78 UK fathers, Greenhalgh, Slade, and Spiby (2000) found that how the father experienced his partner's labour and delivery may be a potential risk factor for the father's later psychosocial wellbeing. **Previous research has found being included may reduce the risk of post-traumatic stress disorder for fathers following a traumatic birth (White, 2007).** Added to this, men were commonly not given the opportunity to talk about their concerns, thus leaving any concerns unresolved (Friedewald, Fletcher & Fairburn, 2005). In another UK study, Deave and Johnson (2008) used semi-structured interviews to explore what the transition to fatherhood meant for first-time fathers. Twenty new fathers were interviewed in the last trimester⁹ of pregnancy and again between three to four months postpartum. Content analysis supported the findings of the Deave, Johnson, & Ingram (2008) study that fathers had issues similar to those of their partners. In addition, Deave and Johnson (2008) found that fathers wanted more inclusion in antenatal activities along with their partners.

Men felt that they were without the support mechanisms available to their pregnant partners, often leaving them feeling isolated, made worse when they were without the role models and/or guidelines that would have enhanced their passage into fatherhood (Deave & Johnson, 2008). First-time fathers who did not have sufficient knowledge and understanding of pregnancy, labour and delivery were also at risk of feeling psychological distress (Boyce et al., 2007; Deave & Johnson, 2008). Chapman (2000) revealed that men tended to find it very difficult to cope with the changes they witnessed in their partners during childbirth, as well as with the labour pain their partners endured. Fathers felt that they had lost their partners to the pain. Deave and Johnson (2008) supported this finding when they concluded that labour pain often left men feeling excluded and anxious about what was happening. Deave and Johnson (2008) also reported that being involved in the antenatal preparation, feeling he has a role to play during labour and delivery, and knowing what it is, could enhance a father's perception of the birth of his child. In an earlier study, Johnson (2002) reported similar findings and concluded that meeting these needs can not only positively influence the father's perception of childbirth but can also influence the new father's relationship with his child.

Johansson, Rubertsson, Rådestad, and Hildingsson (2012) used mixed methods to collect quantitative and qualitative data. Of the 827 participants, 111 Swedish fathers

⁹ from week 29 until birth

commented on their birth experiences. Content analysis was used to examine the qualitative data. The competence of the professionals and their approach to the fathers impacted on the father's experience of the birth. Fathers who felt the mothers had not received good care and/or who felt themselves excluded and/or unsupported reported lower birth satisfaction. Fathers also felt the need for information sharing and a willingness by professionals to incorporate the desires of the parents into their care plan for the mother. Fathers emphasized how important it was to have familiar professionals in attendance and how they struggled when unfamiliar carers took over care of the mother.

In a smaller Swedish qualitative study, Premberg, Carlsson, Hellstrom, and Berg (2011) asked ten first-time fathers to reflect on their experiences of the labour and birth of their first child. All mothers gave birth in hospital with professional support. Those fathers who were interviewed were limited to those who were selected by a supervisory midwife who excluded any father if the mother had not had an uncomplicated vaginal delivery. This study can be seen to show selection bias, and consequently describes a limited part of the new father's whole childbirth experience. However, some of the themes identified by Premberg et al. (2011) are similar to and/or supported by those of other studies. Themes identified included: the father's excitement tinged with concerns for the safety of the mother and birthing child; the sharing of this experience - his involvement and appreciation of midwife support to be involved; the effect the mother's ability to cope had on his perception of his childbirth experience; and his delight in a safe and healthy outcome for mother and baby. Feeling safe has been explored from the perspective of mothers and this concern fathers have expressed for the safety of mother and baby is not surprising nor unexpected (Howarth, Swain, & Treharne, 2013). The father's expressed need to receive support to be involved throughout the labour and delivery is supported by the Johansson et al. (2012) study.

Feeling better about their partner's pregnancy and the birth of their child could assist the father make the transition to fatherhood and this could encourage him to be a supportive partner (Castle et al., 2008). Thus, the prospect of quality family relationships would be enhanced, with the child more likely to develop a secure attachment (Fowles & Horowitz, 2006; Nelson, 2004; Howarth, Swain & Treharne, 2011a). Fathers who had a positive experience of childbirth were also more likely to have no symptoms of depression at six weeks postpartum compared to those who had unmet expectations of their birthing experience (Greenhalgh et al., 2000).

2.8. Summary

While childbirth is unpredictable, women approach labour and birth based on their hopes and expectations (Koehn, 2008). However, women may be fearful of what may go

wrong. Risk factors which may result in complications during labour and delivery include fear of childbirth pain and fear of an inability to manage and maintain personal control, culminating in high pregnancy anxiety (Aleghagen et al., 2001; Green, 1999; Howarth et al., 2011a; Lally et al., 2008; Martin & Fleming, 2011; Waldenstrom et al., 2004). Pregnancy anxiety, especially when coupled with low childbirth self-efficacy, may result in an increased reliance on professionals as women relinquish personal control and hand their birthing processes over to the professionals (Miller, 2003).

Mothers may also feel they do not have adequate social support. Continuous warm and caring support by trusted supporters and carers throughout pregnancy, labour, and delivery has been found to reduce anxiety. It assists women to remain in control of their birthing processes, consequently resulting in a more positive childbirth experience (Halldorsdottir & Karlsdottir, 1996; Howarth, 2010; Williams et al., 2010).

Concern has also been expressed that many women are receiving medical interventions that they could have managed without (Bradley, 1996; Klein, 2004). In particular, the increasing rate of caesarean sections is cause for concern (DiMatteo, 1996; Klein, 2004; Lobel & DeLuca, 2007). While for those mothers and babies who have suffered complications during childbirth, a caesarean section has been lifesaving, such treatments come with both physical and psychological costs (DiMatteo et al., 1996; Martin & Fleming 2011; Svardby et al., 2007; Waldenstrom et al., 2004). When the caesarean was the result of an emergency these costs were more marked, often resulting in the childbirth experience being perceived as negative (Blomquist et al., 2011; DiMatteo et al., 1996). Women may feel disappointed in themselves and experience further disappointment and dissatisfaction as a result of such unexpected medical interventions (Bradley, 1996; Miller, 2003; Rijinders et al., 2008; Shannon et al., 2007).

Negative birth experiences may have serious consequences for the mother-child relationship (Mercer & Ferketich, 1990). Consequently, some practitioners recommend that mothers be encouraged to take greater responsibility for and control over their own pregnancies, labour and delivery experiences (Miller, 2003; Rosen, 2004). Having her labour and delivery expectations met enhanced the mother's possibility of experiencing higher birth satisfaction (Goodman et al., 2004; Manning & Wright, 1983).

Research indicates a cultural shift in the role of fatherhood (Henwood & Proctor, 2003). There is limited research examining the childbirth experiences of fathers from his perspective and none was located which examined pregnancy anxiety in fathers. However, papers that were located indicated that fathers have issues similar to those of mothers during pregnancy, labour, and delivery (Deave et al., 2008).

Both pregnancy anxiety and birth satisfaction are under-researched in New Zealand, especially for fathers. New Zealand has a unique maternity care system. This, plus New

Zealand's small multi-cultural population, would appear to make New Zealand an ideal setting for further research into the factors which impact on both pregnancy anxiety and birth satisfaction for both mothers and fathers. The present trial aims to discover whether the intervention, a skills-based childbirth/childbirth coaching preparation programme, impacts positively on pregnancy anxiety at 36 weeks gestation and birth satisfaction for both parents.

The following chapter discusses the three other secondary outcomes in the trial - parenting self-efficacy at six months, family life satisfaction at six months, and postpartum depression at six months. It also discusses how these factors impact on family wellbeing.

Chapter 3 – Post birth outcomes

3.1. Chapter overview

The birth of a first child creates a family and places new expectations and pressures on both parents as they undergo transitions in self-concept and life style. While parents generally see childcare as fulfilling, it can also be a source of stress for parents, particularly when difficulties are encountered (Del Vecchio, Walter, & O’Leary, 2009; Donovan, Leavitt, & Taylor, 2005). Transition to parenthood can be facilitated by high parenting self-efficacy and family life satisfaction, and the absence of postpartum depression.

3.2. Parenting self-efficacy

Parental responsibilities make challenging and, at times, exhausting physical, intellectual, and emotional demands on a parent. To enhance confidence in meeting the new challenges of parenthood, parents must learn new behaviours and skills (Ferketich & Mercer, 1994; Fowles & Horowitz, 2006; Rogan, et al., 1997; Rubin, 1984).

3.2.1. Parenting self-efficacy – a definition

Parenting self-efficacy is defined by Coleman and Karraker (1997) as:

[...] beliefs [that] embody an estimation of the degree to which parents perceive themselves as capable of performing the varied tasks associated with this highly demanding role. (p.47)

Parental self-efficacy can also be construed as one’s perceived ability to exercise positive influence on the behaviour and development of one’s children. (p. 58)

Learning to parent is a constantly evolving process in which the parent must adapt to the child’s changing needs over the years of the child’s development (Fowles & Horowitz, 2006; Rogan, et al., 1997; Rubin, 1984).

3.2.2. Parenting self-efficacy and Bandura’s model of self-efficacy

The concept of parenting self-efficacy was developed from Bandura’s model of self-efficacy (Coleman & Karraker, 1997; Teti, O’Connell & Reiner, 1996). Parenting self-efficacy beliefs incorporate a knowledge of child development and how to respond appropriately to a child’s behaviour and needs. In a review of research findings examining cognitive factors related to parenting self-efficacy, Coleman and Karraker (1997) synthesized theory and empirical findings to provide an overall understanding of the theoretical and practical implications of parents’ confidence with their parenting capabilities. They established that a parent’s ability to facilitate a child’s cognitive development allowed the child to develop its

intellectual potential. A parent's ability to nurture emotional development assisted the child to develop a secure attachment, self-esteem and the ability to relate empathically towards others. A parent's ability to encourage social development encouraged the child to develop prosocial behaviour. A parent's ability to care for the child's physical health enabled the child to grow into a healthy adult.

Self-efficacy beliefs related to parenting reflected both parenting skills and parenting satisfaction (Bohlin & Hagekul, 1987; Coleman & Karraker, 1997). Parents who felt able to do all these things were likely to experience high parenting self-esteem (Coleman & Karraker, 1997).

3.2.3. Factors influencing parenting self-efficacy for both parents

The following factors have been identified as influencing parenting self-efficacy for both parents: personal self-efficacy; health; marital satisfaction; family functioning; levels of parenting stress; negative affect and focus; feelings of helplessness; postpartum depression; parity¹; advice from ward staff; and state of mind on discharge from hospital. (Bloomfield & Kendall, 2012; Coleman & Karraker, 1998; de Montigny et al., 2013; Jones & Prinz, 2005; Leahy-Warren & McCarthy, 2011; Murdock, 2013; Salonen et al., 2009, 2010; Seigny & Loutzenhiser, 2009)

Other factors have also been found to impact on parenting self-efficacy for both parents. Data were collected by Salonen et al. (2009) from a self-evaluation questionnaire given to a convenience sample of 1300 Finish-speaking, mainly well-educated (one quarter plus with an academic education) parents during week one postpartum. Primiparas (mothers approx. 54%; fathers approx. 65%) and multiparas² were included, with almost all living with a partner. While scores for the dependent variable parenting self-efficacy were high for both parents, a one way ANOVA found that mothers did score significantly higher than fathers. First-time parents also scored significantly lower.

The demands placed on both parents by an infant reduced time available for socialising. In another Finnish study conducted by Junttila, Vauras, & Laakkonen (2007), 297 families provided data which assessed the impact of parental loneliness on parenting self-efficacy. A latent variable structural model determined that parental loneliness was correlated with parenting self-efficacy for both parents. Lonely parents experienced lower parenting self-efficacy. This in turn impacted on their child's social and academic behaviour.

In a study examining associations between marital quality and parenting self-efficacy,

¹ the number of times that a woman has given birth to a fetus with a gestational age of 24 weeks or more, regardless of whether the child was born alive or was stillborn

² woman who has had two or more pregnancies resulting in viable infants

Merrifield and Gamble (2013) suggested that parents who did not look after their own needs reported lower parenting self-efficacy. Participants were 175 cohabiting American couples who were parents (biological or adoptive) of at least one child aged between two and seven years. The majority of parents were white with incomes in excess of \$50,000 and had been in this relationship on average 11.28 years. Couples were in their mid to later 30s with fathers an average of three years older than mothers. Data for each parent was analysed separately. In addition to the finding on self-care, for both parents, regression analysis found that undermining co-parenting was associated with lower parenting self-efficacy. In contrast, supportive co-parenting had a positive impact on parenting self-efficacy for both parents.

3.2.4. Factors influencing parenting self-efficacy for mothers

Mental health issues, including pregnancy anxiety, may impact on a mother's parenting self-efficacy (Kunseler, Willemsen, Oosterman, & Schuengel, 2014). Kunseler et al. (2014) analysed data on depressive and anxiety symptoms and parenting self-efficacy from 822 first-time mothers at 32 weeks gestation, and again at three and 12 months postpartum. In agreement with other researchers, Kunseler et al. (2014) reported that higher pregnancy anxiety was linked to lower parenting self-efficacy at three months postpartum. They, and others, have reported that general anxiety and depression were also correlates negatively affecting maternal parenting self-efficacy and satisfaction with the parental role (Gelfand & Teti, 1990; Kohlhoff & Barnett, 2013; Leahy-Warren & McCarthy, 2011; Teti, Gelfand, Messinger, & Isabella, 1995). Kunseler et al. (2014) suggested his results at 32 weeks gestation indicated that mental health before the birth was a predictor of mothers' parenting self-efficacy up until 12 months postpartum. Multivariate response models indicated that increases in parenting self-efficacy postpartum resulted in decreased anxiety and depressive symptoms. However, for women with lower parenting self-efficacy or higher anxiety or depressive symptoms at 32 weeks gestation, these positive changes during the postpartum period did not occur. These findings indicate the importance of such information so that early interventions can be developed to improve the likelihood a mother will experience parenting self-efficacy as she adapts to her role as mother.

Other psychosocial factors which have been identified as correlates of maternal parental self-efficacy include: the attitude, beliefs, and self-images a mother brings to her parenting; maternal desires and expectations; how well she understands child development coupled with her actual experience of childcare; her perception of the infant; childbirth experiences; social support; and life-style changes. (Bohlin & Hagekull, 1987; Conrad, Gross, Fogg, & Ruchala, 1992; Hagekull & Bohlin, 1990; Kochanska, 1990; Ponomartchouk & Bouchard, 2015; Pridham & Chang, 1985; Salonen et al., 2009; 2010).

It may be that some mothers struggled to adapt to motherhood after busy and satisfying careers (Rubin & Wooten. 2007). Using in-depth interviews with ten highly educated women, Rubin and Wooten (2007) concluded that when these women chose to be stay at home mothers, they experienced difficult and challenging emotions including vulnerability, a sense of loss, and guilt, which caused conflict in their lives. These emotions were persistent despite their beliefs that staying at home benefited themselves, their children, and families as a whole.

Ponomartchouk and Bouchard (2015) used structural equation modelling to examine predictors of maternal sense of parenting competence. Factors measured included infant characteristics and mothers' psychological state during the last seven days. It was discovered that the perception of infant temperament was linked to parenting self-efficacy for mothers. When infant temperament was perceived negatively, parenting self-efficacy was decreased. Teti and Gelfand (1991) had two naïve female research assistants administer a variety of questionnaires during three home visits over a one-month period to 48 clinically depressed and 38 non-depressed mothers of infants. They concluded that negative rumination about themselves and their infants by depressed mothers may impact on parenting self-efficacy. This conclusion was supported in a later study. Verhage, Oosterman and Schuengel (2013a) asked 616 women pregnant with their first child to complete questionnaires at 32 weeks gestation (parenting self-efficacy and depression measured), three months, and 12 months postpartum (infant temperament, parenting self-efficacy, and depression measured). They concluded that self-perception indicated perception of infant temperament.

However, Hudson, Elec, and Fleck (2001) and Troutman et al. (2012) reported that infants reacted negatively and were difficult to sooth when mothers demonstrated low parenting self-efficacy. Troutman et al. (2012) compared a sample of irritable infants ($n = 24$) to non-irritable infants ($n = 29$) (irritability determined by The Neonatal Assessment Scale [NBAS: T. Brazelton, 1973] twice, at three and four weeks postpartum) to determine whether infant irritability impacted on the mother's confidence in her mothering skills. Participants were predominantly white and from professional households. Fifty-three percent of infants were male. Using a prospective design, Troutman et al. (2012) analysed the development of the mother's parenting self-efficacy. At eight weeks postpartum, using t-tests, mothers of infants determined to be irritable were shown to have significantly lower parenting self-efficacy than mothers of non-irritable infants. However, Troutman et al. (2012) also reported that while mothers of non-irritable infants showed little increase in their levels of parenting self-efficacy, mothers of irritable infants showed a significant increase in parenting self-efficacy between eight weeks and the second measure at 16 weeks. Consequently at 16 weeks there was no significant difference in parenting self-efficacy between the groups.

In a computerised audio-recorded infant cry response task conducted with 151 first-

time pregnant women, Verhage, Oosterman and Schuengel (2013b) discovered that women who received feedback suggesting they had been unsuccessful in a soothing task perceived crying infants more negatively and reported a greater decrease in parenting self-efficacy than mothers who received positive feedback. They concluded that these perceptions of lack of success in their parenting may have impacted negatively on parenting self-efficacy. This finding indicates the importance of positive support. Ponomartchouk and Bouchard (2015) reported the importance of parenting alliance. When the mother felt undermined in her parenting, she reported lower parenting self-efficacy. This finding supported that of Merrifield and Gamble (2013). They also reported that conflict in the parental relationship had a negative impact on parenting self-efficacy for mothers. Ponomartchouk and Bouchard (2015) also examined the impact of postnatal leisure activities with the baby on maternal parenting self-efficacy. More leisure time spent together indicated higher parenting self-efficacy. This finding corresponds with others that suggested that the frequency of the family's participation in leisure activities impacted on her parenting self-efficacy. More family leisure activities correlated with increased parenting self-efficacy (Ponomartchouk & Bouchard, 2015). Having social support also impacted on maternal parental self-efficacy (Ponomartchouk & Bouchard, 2015). Other researchers have also found that mothers in particular can find themselves isolated and those with poorer social support had lower parenting self-efficacy (Cutrona & Troutman, 1986; Leahy-Warren & McCarthy, 2011).

3.2.5. Factors influencing parenting self-efficacy for fathers

Overall fathers reported lower parenting self-efficacy than mothers, more so when the child was an infant (Froman & Owen, 1989; Hudson, et al., 2001; Reece & Harkless, 1998; Salonen et al., 2010). Froman and Owen (1989; 1990) suggested that mothers who had reported higher parenting self-efficacy did so as a result of greater opportunities to practice infant care. Hudson et al. (2001) examined first-time mothers' and fathers' parenting self-efficacy (infant care self-efficacy) during the first four months postpartum. Couples were living together, both parents participated, couples expected the birth of a first and single healthy child, and no other child lived in the household. Data were not collected from couples who had extra issues (e.g. health issues, multiple births) which may have confounded and complicated results. Potential couples were identified by primary care staff during antenatal visits. Forty-four couples meeting the criteria were recruited in the ninth month of the pregnancy. Data from mothers and fathers were analysed separately using repeated measures of analyses of variance and univariate analysis. Paired T-tests determined any differences between the mothers' and fathers' data. Both parents showed increased scores in parenting self-efficacy over the test periods one, two, three, and four months postpartum. However, mothers' increase in

parenting self-efficacy was significantly greater than that for fathers'. They concluded that fathers who returned to work soon after the birth of a child initially had less opportunities to develop their parenting skills.

Unlike for mothers, Salonen et al. (2009) did not find childbirth or lifestyle changes correlated with parenting self-efficacy for the fathers. However, other factors were found to impact on fathers' parenting self-efficacy. Data were collected by Leerkes and Burney (2007), both prenatally and postnatally, for 73 American urban, predominantly white, first-time fathers on higher incomes, to examine potential predictors of parenting self-efficacy as men transitioned to fatherhood. Fathers who had warm and supportive relationships with their own fathers reported higher parenting self-efficacy at the prenatal measure. In the postnatal measure, education and remembered paternal warmth predicted parenting self-efficacy. They also found that fathers' parenting self-efficacy was strengthened by parental involvement and adequate social support. Merrifield and Gamble (2013) also reported that higher marital satisfaction was associated with higher parenting self-efficacy.

While this research indicates factors that influence parenting self-efficacy, much of it is correlational. The possibility that there may be other unidentified factors putting parenting self-efficacy at risk, or that relationships between factors are more complex than noted, cannot be overlooked. As participants for these studies are often predominantly white and from higher educational and income levels, studies targeting other cultural and socio-economic groups could develop and add to these results, thus giving a more comprehensive understanding of the factors which impact on parenting self-efficacy.

3.2.6. Consequences of parenting self-efficacy and its impact on family wellbeing

How confident a parent feels in his/her parenting skills can impact on the family's sense of wellbeing. When parents felt skilled and competent to parent their children, they felt fulfilment, but when they did not feel adequate to the task, they felt disappointment, frustration and unhappiness (Hudson et al., 2001; Rochlen, McKelly, Suizzo & Scaringi, 2008). Repeated success with parenting increased parenting self-efficacy (Bohlin & Hagekull, 1987; Kochanska, 1990; Porter & Hsu, 2003; Pridham & Chang, 1985; Salonen et al., 2009). Higher parenting self-efficacy was linked to decreases in anxiety, less psychological distress, and fewer symptoms of postpartum depression for mothers (Cutrona & Troutman, 1986; Haslam, Pakenham, & Smith, 2006; Kunseler et al., 2014). The attachment process was less likely to be compromised when decreased anxiety and depression resulted in decreased negative parenting strategies (Kohlhoff & Barnett, 2013).

Low parenting self-efficacy was an indicator of parenting risk behaviours including insensitive parenting indicated by rigid and impatient behaviour, defensive and controlling

parenting, a negative coping style, frustration with parenting, and the use of punitive disciplinary techniques, all with the potential to lead to abusive parenting (Campos, Kermoian, & Zumbahlen, 1992; Coleman & Karraker, 1997; Pierce et al., 2010; Sanders & Woolley, 2004; Teti et al., 1996). Should parenting turn abusive, this can have negative effects on the child's social, intellectual, and emotional development (Fergusson, Boden, & Horwood, 2008). It can lead to child behavioural problems and later depression and may impact on the child's physical health throughout the child's lifespan (Felitti et al., 1998; Fergusson et al., 2008). It is also suggested that incompetent parenting could even increase the child's chances of later developing obesity (Anzman-Frasca, Stifter, Paul, & Birch, 2013; Patterson, 2002).

Lack of parenting skills in impoverished communities is of particular concern as poverty is likely to decrease the family's wellbeing as parents struggle to overcome the adversity such an environment entails (Elder, Eccles, Ardelt, & Lord, 1995). However, Salonen et al. (2009) suggested that because parenting self-efficacy is important for parental wellbeing, it could be a predictor of parents at risk of dysfunctional parenting practices, even in well-educated parents who were not living in poverty. Parenting self-efficacy may also be seen as a potential predictor of child wellbeing with higher parenting self-efficacy indicating more responsive parenting and the provision of more positive experiences for children (Elder, 1995; Hsu & Lavelli, 2005; Jones & Prinz, 2005; Leerkes & Crockenberg, 2002; Teti & Gelfand, 1991; Warren, Brown, Layne, & Nelson, 2011). Researchers have reported that high parenting self-efficacy impacted positively on children's behavioural and emotional issues (Bohlin & Hagekull, 1987; Coleman & Karraker, 2003; Dumka, Ganzales, Wheeler, & Millsap, 2010; Haan, Prinzie, & Dekovic, 2009; Teti & Gelfand, 1991).

However, when difficult behaviour encountered incompetent parenting, the child was likely to respond with increasingly difficult behaviour (Fergusson et al., 2008). As the child got older, low parenting self-efficacy may be reflected in the child's social behaviour. Secer, Ogelman, and Onder (2013) found that fathers reporting low parenting self-efficacy was a useful predictor of aggressive, bullying behaviours as well as hyperactivity-distractibility in their children. When parenting-self-efficacy improved during child mental health therapy, there was a corresponding improvement in child mental health symptoms (Warren et al., 2011).

In New Zealand, there are parents who struggle to parent effectively. From July to December, 2015, either Child, Youth and Family or the New Zealand police considered 34,108 children and young people were at risk, largely as a result of dysfunctional family situations in which inadequate parenting by New Zealand parents and carers was an issue (Child, Youth and Family, 2015a). When Fergusson et al. (2008) re-examined analysed data from a birth cohort of over 1000 New Zealand adults aged 25 years, measured at 18, 21, and 25 years, they

found that parental physical punishment/abuse as children put these young adults at greater risk of depression, anxiety disorder, substance dependence, suicidal ideation, suicidal behaviour, as well as conduct/anti-social personality disorder. After adjustments for confounding factors such as paternal education, family standard of living from child's age zero to ten years, changes of parents, parental attachment at age 15, child IQ, and childhood sexual abuse, young adults who had endured high levels of physical punishment had a 1.5 times higher risk of developing a mental disorder than those whose parents did not parent punitively. Interventions which assist parents to develop higher parenting self-efficacy in which sensitive and appropriate parenting behaviours are taught may have the potential to reduce the numbers of New Zealand children to be considered at risk of developing mental disorders and antisocial behaviours.

3.3. Family life satisfaction

How the family functions contributes to the degree of happiness and consequent subjective wellbeing experienced by the individuals within that family (Hellevik, 2003).

The family system ... affects virtually every aspect of personal development and well-being during the formative period of life. (Bandura et al., 2011, p. 422)

[...] a person's family [life] satisfaction is so clearly bound up with the fundamental experience of well-being... (Melberg, 2006, p. 352)

Families, fundamental to the structure of society, face many challenges (DeFrain & Asay, 2007a; DeFrain & Asay, 2007b). Keeping the family unit functioning strongly increases the potential for a strong society in which members feel satisfied with family life (DeFrain & Asay, 2007b; Johnson, Zabriskie, & Hill, 2006).

3.3.1. Family life satisfaction – a definition

Family life satisfaction reflects an individual's perceptive evaluation of all aspects of that individual's family life situation, including how individual members of the family affect each individual's wellbeing through their own personalities and behaviours (Melberg, 2006). Family life satisfaction influences other aspects of life and is strongly linked to satisfaction in other life domains such as satisfaction with partner, children, and life in general. (Bandura et al., 2011; Melberg, 2006). Diener and Diener (1995) reported that family life satisfaction was correlated with life satisfaction in all 31 nations examined. Diener, Suh, et al. (1995), in an examination of differences in reported happiness and life satisfaction between Pacific Rim countries (Japan and Korea) and the USA, also found family life satisfaction was a correlate of life satisfaction for all three countries. These studies illustrate that once couples begin having

children, family life satisfaction is a new dimension closely related to their subjective wellbeing and to their overall satisfaction with life.

3.3.2. Factors influencing family life satisfaction for both parents

Some parents find parenting beset with stress and negativity (Doss, Rhoades, Stanely, & Markman, 2009; Garfield et al., 2014; Paulson & Bazemore, 2010a). Others find parenting gives meaning to their lives (Diener, Diener, & Diener, 1995; Myers & Diener, 1995; Nelson et al., 2013; Nelson, Kushlev, & Lyubomirsky, 2014). Parenting styles have been found to impact on family life satisfaction. Compassionate parenting which aims to see the world through the child's perspective and parent to suit the child's needs, was correlated with family life satisfaction (Conti, 2015; Crocker & Canevello, 2008; Diener et al., 1995; Myers & Diener, 1995). Parenting dominated by self-image goals, that is, aiming to mold the child to reflect the parent positively, demonstrated increased anxiety and distress in relationships which detracted from family life satisfaction (Crocker & Canevello, 2008; Diener et al., 1995; Myers & Diener, 1995).

Studies on family life satisfaction tend to involve families with children older than newborns to infants of six months. They have value in the present discussion because they identify influencing variables which appear to have a persistent impact on family life satisfaction. Survey data for Norwegian men ($n = 267$) and women ($n = 252$) who were married or in a cohabiting relationship and had dependent children aged between two and 16 years, were examined primarily for family life satisfaction by Melberg (2006). Data were drawn from the International Social Survey Programme module examining attitudes towards family and gender roles. Correlational analysis, conducted separately for men and women, allowed Melberg (2006) to establish relationships between factors for each gender. Limitations included using used single item measures where a multi-item measure may have been more reliable, differing measures of the same variable between samples, and differences culturally. However, the study does provide some insight into what influences family life satisfaction for both parents, including: quality of family relationships; attitudes and behaviours of family members; levels of conflict within the family; balance of work-family responsibilities; time pressures created by work/home responsibilities; economic reality of married/cohabiting life; degree of sexual satisfaction; and degree of satisfaction with social life.

In a meta-analysis, Ford, Heinen, and Langkamer (2007) examined relationships between factors related to work and family domains and how these impacted on family life satisfaction. To be included, papers needed to report correlations between the following constructs: job involvement; job stress; support from work domain; work hours; job satisfaction; work interference with family; family conflict; family stress; family support; family hours; family-nonwork satisfaction; and family interference with work. If work

stressors impeded the parents' endeavours to meet all the demands of both family and work responsibilities their family life satisfaction was reduced (Ford et al., 2007).

Using an online survey sampling company which collected data from a national sample of people who had chosen to be involved in online research, Agate, Zabriskie, Agate, and Poff (2009) examined responses from 898 American families regarding their satisfaction with family life. They found satisfaction with family leisure time increased family life satisfaction. They concluded that the quality of family leisure involvement was more important in predicting family life satisfaction than the amount of time families spent together.

In a study of family self-efficacy beliefs and family life satisfaction, Bandura et al. (2011) recruited 142 intact families living in and around Milan. Participants were recruited from six secondary schools which were randomly selected as representative of the different socio-economic levels identified in the area. Data were included from both parents and their adolescent offspring, aged 13 to 19 years. Data from mothers, fathers, and adolescents who made up the family structure, were analyzed separately. Using confirmatory factor analysis and one-way ANOVAs to examine for differences between parents, Bandura et al. (2011) found no gender differences for impact on family life satisfaction for: partner self-efficacy (supporting and confiding in each other); collective family-efficacy (working as a family team); and parenting self-efficacy. They did find that parents felt better able to manage their personal relationship than manage their relationship with their child, that promoting a sense of collective family efficacy was more difficult. Nevertheless, these correlations were still at a positive level. However, parents were significantly different in their perceptions of their self-efficacy in managing different aspects of family organization.

3.3.3. Factors influencing family life satisfaction for mothers

While the factors identified by Melberg (2006) were common to both men and women, how they evaluated these show differences in impact. For example, women's family life satisfaction was less influenced by time pressures. Mothers were also more satisfied with their relationships with minor children. Mother's family life satisfaction was also found to be affected by level of education, with higher education suggesting greater coping skills and consequently greater satisfaction. Disagreements with partners over equitable sharing of housework also affected family life satisfaction for mothers.

3.3.4. Factors influencing family life satisfaction for fathers

How fathers experienced family life was more affected by time pressures caused by work and/or home responsibilities than it was for mothers (Melberg, 2006). Melberg (2006) also found that men's satisfaction with family life increased as they and their children got older

and home workloads decreased and family incomes improved. Having positive relationships with his children enhanced the father's family life satisfaction as did partners who gave him uncritical support and who did not overload him with demands.

3.3.5. Consequences of family life satisfaction and its impact on family wellbeing

When any of the interrelated factors that promote family life satisfaction were lacking, overall wellbeing and life satisfaction were compromised and family members experienced unhappiness (Diener & Diener, 1995; Myers & Diener, 1995; Melberg, 2006). People with the most successful close relationships, an important component of family life satisfaction, were found to be happy people (Oishi, Diener, & Lucas, 2007). Happiness was associated with personal success and satisfaction with social activities (Cooper, Okamura, & Gurka, 1992; Diener & Chan, 2011; Lyubomirsky, King, & Diener, 2005; Lyubomirsky, Tkach, DiMatteo, & Lepper, 2006; Oishi, Diener, & Lucas, 2007). Satisfaction with social life was a factor predicting family life satisfaction (Melberg, 2006). Higher family life satisfaction was indicative of higher subjective wellbeing which, in turn, affected the abilities of family members to achieve their life goals and reflected their happiness and life satisfaction (Diener et al., 1995; Myers & Diener, 1995; Melberg, 2006). Happier people tend to secure better jobs, to demonstrate higher work performance, and tend to be evaluated more positively by their supervisors (Lyubomirsky et al., 2005; Oishi et al., 2007).

Even if an individual has previously achieved a balanced and happy life-style, this can change once a first child is born. A successful career can be affected. Work family conflict studies report the impact such conflict work outside the home may have on family life and vice versa (Perrewe, Hochwarter, & Kiewitz, 1999):

Work-family conflict arises when the demands of being in one domain are incompatible with the demands of being in the other domain [...] both of these types of conflict can have deleterious effects on work and family outcomes (p. 319)

Perrewe et al. (1999) reported that when the individual felt that work conditions were supportive and satisfying, satisfaction with the work situation was more likely to transfer to family life satisfaction. When work interfered with family life or family life interfered with work, satisfaction was decreased in each situation as parents struggled with their conflicting responsibilities (Dilworth, 2004; Perrewe et al., 1999). Finding a balance between work and home responsibilities could ease stress experienced when these two roles became conflicted (Melberg, 2006).

Conflict in the family as a result of lack of family cohesion and expression, and poor family relationships, especially lack of marital satisfaction, diminished a family's sense of

wellbeing and hence family life satisfaction (Mollerstrom, Patchner, & Milner, 1992). Family routines as a means of ordering daily life could ease stress by enhancing children's emotion regulation, thus contributing towards family wellbeing and satisfaction (Migliorini, Cardinali, & Rania, 2011). Families making the time to enjoy leisure time together provided opportunities for parents and children to bond together, to understand each other and each other's issues, and to strengthen their relationships, thus increasing their family life satisfaction (Agate et al., 2009; Zabriskie & McCormick, 2003).

3.4. Postpartum depression

Taylor and Brown (1988) described positive affective experiences as a feature of sound mental health. When parents struggled with parenting skills and/or family life they may experience dissatisfaction. This may result in lower subjective wellbeing and unhappiness, both found to impact on mental health (Davidson, Mostofsky, & Whang, 2010; Diener & Seligman, 2002; Lyubomirsky et al., 2005; Siahpush, Spittal, & Singh, 2008). People reporting negative emotions were found to have shorter telomeres which could be the mechanism behind ill health, including depression, found in people experiencing low wellbeing (Diener & Chan, 2011; Lung, Chen, & Shu, 2007; Tyrka et al., 2010).

Postpartum depression is seen as one of the most common complications of childbirth (Gavin et al., 2005; Wisner, Parry, & Piontek, 2002). It is a disorder which affects not only the mother, but has been found to affect the father as well (Paulson & Bazemore, 2010a). The consequences of postpartum depression can impact on other family members and the wider community. Taken to its extreme, an episode of major postpartum depression in a parent may have damaging consequences for the children and family as a whole (Burke, 2003; Gaynes et al., 2005).

3.4.1. Diagnosis and symptoms of postpartum depression

A clinical diagnosis of postpartum depression includes both minor and major depressive episodes, with major episodes especially indicating the need for treatment (American Psychiatric Association, 2000). Symptoms may include sad or depressed mood, mood swings, loss of interest in activities, appetite disturbance, weight gain or loss, sleep issues, psychomotor agitation or slowing, fatigue, lethargy, feeling worthless or inappropriately guilty, concentration issues, difficulty thinking and making decisions, and recurrent suicidal thoughts (Melrose, 2010; Schiller, Meltzer-Brody, & Rubinow, 2015; Wisner et al., 2002). Tearfulness, despondency, anxiety, and feeling unable to cope with the demands of a new infant may also manifest (Robertson, Grace, Wallington, & Stewart, 2004; Schiller et al., 2015). Mothers' and fathers' postpartum depression are discussed separately.

3.5. Postpartum depression in mothers

Symptoms of postpartum depression in mothers may occur as early as four weeks postpartum but may also appear later in the postpartum period, up to 12 months after delivery, and commonly last up to six months (Field, 1998; Gavin et al., 2005; Musters, McDonald, & Jones, 2008; Stowe, Hostetter, & Newport, 2005). It is also proposed that depressive symptoms may be present during the antenatal period (Beck, 2002; Gavin et al., 2005; Stowe et al., 2005; Yonkers et al., 2001). Galbally, Buist, Romans (2017) specified that *onset is typically insidious in the course of the pregnancy* (p. 423) and that for many women this may be their first experience of any psychiatric symptoms.

3.5.1 Incidence and treatment of maternal postpartum depression

In a meta-synthesis of postpartum depression, Beck (2002) noted that up to 13% of women who give birth will experience postpartum depression at some stage during their child's first year. A New Zealand study by McGill et al. (1995) found that 13% of 1330 Christchurch women tested with the Edinburgh Postnatal Depression Scales ([EPDS] Cox, Holden, & Sagovsky, 1987) six to nine months after childbirth reported levels of depressive symptoms suggesting postpartum depression. Galbally et al. (2017) consider that up to 15% of women suffer this condition. However, when women are dealing with life stressors such as substance abuse, lack of support, social isolation, strained relationships, other life stressors, being adolescent at time of pregnancy, and a history of suffering depressive episodes, their incidence of postpartum depression is likely to be higher.

Postpartum depression is persistent and requires treatment which approximately 50% of sufferers do not seek (Reck et al., 2004). Only six percent of the 13% of Christchurch women whose results indicated postpartum depression recognised that their symptoms signified depression (McGill et al., 1995).

3.5.2. Factors influencing maternal postpartum depression

Causes of postpartum depression remain unclear but rapid changes in reproductive hormones immediately before and after birth may play a significant part in the development of postpartum depression (Schiller et al., 2015). Schiller et al. (2015) commented that:

reproductive hormones play a major role in basic emotion processing, arousal, cognition, and motivation, and thus, may contribute to PPD indirectly by influencing the psychological and social risk factors...reproductive hormones also regulate each of the biological systems implicated in major depression, which suggests that hormones may impact a woman's risk for PPD directly (Schiller et al., 2015, p. 48).

In a review of literature encompassing both human and non-human animal studies, Schiller et

al. (2015) examined the hypothesis that some women constitute a *hormone sensitive PPD phenotype* (p. 48). This would suggest the possibility of a neuroendocrine pathophysiology for postpartum depression as reproductive hormones are seen to interact with the biological systems associated with postpartum depression. This would make women with a hormone sensitive PPD phenotype particularly at risk. This sensitivity, combined with a rapid decline in reproductive hormones after childbirth may, on its own, or in conjunction with other factors, be a primary factor influencing the development of postpartum depression (Schiller et al., 2015; Wisner et al., 2002). Schiller et al. (2015) also suggested that differences in symptoms triggering depressive episodes may suggest a number of different depressive phenotypes.

In an article discussing postpartum depression, screening, diagnosis, potential treatments and the efficacy of these treatments, Wisner et al. (2002) identified a number of different psychological and social factors which may contribute towards the development of postpartum depression in women during different time periods. Factors identified by Wisner et al. (2002) include: stressful life experiences; past episodes of depression (related to or not related to childbirth and/or during pregnancy); and a family history of depression and mood disorders. Other potential triggers include: neuroticism; self-esteem issues; childcare stress; infant temperament; poor quality social support; lack of network resources; and unsatisfactory support from the father (Beck, 2001, 2002; Collins et al., 1993; O'Hara, & Swain, 1996; Robertson et al., 2004). Miscarriage and still birth may also increase the risk of postpartum depression (Galbally et al., 2017).

A systematic review conducted by Robertson et al. (2004) set the following criteria: published in English between 1990 and 2001; peer-reviewed; empirical; human subjects; diagnostic and temporal criteria of postpartum depression used; cases were nonpsychotic with an onset within one year postpartum; and method of assessment was clearly stated with proven reliability. Two major meta-analyses (incorporating results from over 70 studies) of over 12000 participants plus other studies including nearly 10000 other participants were identified and included in the review. Robertson et al. (2004) supported and added to the above findings, also reporting antenatal risk factors which put women at risk of developing postpartum depression:

- depression during pregnancy (strong/moderate effect)
- anxiety during pregnancy (strong/moderate effect)
- stressful life experiences during pregnancy and in the early days post birth (strong/moderate effect)
- inadequate social support (strong/moderate effect)
- a previous history of depression (strong/moderate effect)
- neuroticism (moderate effect)

- marital relationship (moderate effect)
- obstetric factors (small effect)
- socioeconomic status (small effect)

It has been claimed that unexpected caesarean sections may be a risk factor for postpartum depression (DiMatteo et al., 1996; Garel et al., 1990; Xie et al. 2011). However, Carter, Frampton, and Mulder (2006) claim that the link between postpartum depression and caesarean sections has not yet been conclusively established. In a systematic review of studies that examined maternal mood 10 days to one year after delivery, they concluded only nine of these were methodologically superior studies. Of these, they reported that only one established a significant association between caesarean section and postpartum depression. However, Torkan, et al. (2009), in a study comparing quality of life between 50 mothers who delivered vaginally and 50 mothers who delivered by caesarean section found, that in nearly all of the subscales they measured, the group which delivered vaginally had a better quality of life. While the mother who had a caesarean delivery may not develop postpartum depression, it would appear that her quality of life, at least, was compromised for a period of time after the surgical delivery.

Content analysis of data collected using focus groups and in-depth unstructured individual interviews with a small group of 13 first-time mothers led Cronin (2003) to conclude that new mothers struggled with the difficulties experienced in adapting during the first few months (up to nine months postpartum) of motherhood. She surmised that this put them at risk of developing postpartum depression. Infants with poor sleep behaviours may also trigger postpartum depression as their mothers become more exhausted (Sadeh, Tikotzky, & Scher, 2010). When partners were not supportive or close, new mothers were also at risk of postpartum depression (Iles, Slade, & Spiby, 2011). When the mother perceived she had the support of her partner during pregnancy, she reported lower maternal and infant distress (Stapleton et al., 2012). Lack of social support, particularly from family and friends, and dissatisfaction with family life were also risk factors (Collins, Dunkel-Schetter, Lobel, & Scrimshaw, 1993; Leahy-Warren, McCarthy, & Corcoran, 2011; Tammentie, Tarkka, Åstedt-Kurki, & Paavilainen, 2002).

3.5.3. Consequences of maternal postpartum depression and its impact on family wellbeing

Being able to interact with her child and see from the child's perspective are skills essential to developing a concept of self as mother (Koniak-Griffin, 1993; Rubin, 1984). Postpartum depression appears to inhibit or even halt the development of a sense of self as a competent mother by impeding the mother's ability to interact effectively with her child (Cutrona & Troutman, 1986). Women suffering postpartum depression showed less

reciprocity in their interactions with their infants (Field et al., 1985; Pearson et al., 2012).

In a narrative review summarizing the findings reported in 42 published papers and posters presented at international conferences from the previous decade, Field (2010) examined the impact of postpartum depression on early interactions, parenting, and safety practices. She reported that depressed mothers struggled to establish sleep routines, well-child visits, and feeding practices, in particular, to establish and continue satisfying breastfeeding practices. Field (2010) also reported that children of depressed mothers were not up-to-date with vaccinations at 24 months and that depressed mothers practised less safety practices in and out of the home. Melrose (2010) has suggested that the depressed mother may feel ambivalent or even disinterested in and disconnected from her child. This may contribute to an understanding of why depressed mothers struggle to adapt to the routines and obligations of motherhood.

The emotional impact of postpartum depression during the perinatal³ period may be so severe for some women that their risk of suicide is increased. Lindahl, Pearson, and Colpe (2005) conducted a systematic review of literature which examined estimates of the prevalence of suicidal ideation, attempts, and successes during pregnancy and the postpartum period. While estimates indicated that suicides during pregnancy were lower than reported suicides for the total population of women, they did occur during pregnancy and in the postpartum period⁴. They were found to be one of the leading causes of death amongst this population of depressed women. As part of an intervention programme aimed at decreasing postpartum depression to reduce suicidality and its impact on the mother-child relationship, Paris, Bolton, and Weinberg (2009) asked mothers to complete self-report questionnaire before a therapeutic intervention to determine level of suicidality. Interactions between the mothers and infants were also video-taped and observer rated before treatment. Participants (n = 32) were predominantly first-time mothers with a mean age of 32.5 years with infants with a mean age of 16 weeks. Highly suicidal women were found to be *less able to demonstrate sensitivity and reciprocity with their infants during unstructured interactions* (p. 317), behaviour typical of depressed mothers who were not suicidal. Their infants showed the same characteristics, more crying and fussiness and less positive affect and attempted engagement with their mothers seen in the infants of other depressed mothers.

Depressed mothers tend to provide a negative home environment lacking in routines and nurturing and may employ harsh and ineffective discipline strategies (Johnson & Flake, 2007). Feng, Shaw, and Skubin (2007) used both observational methodology to observe behaviours of infant mother dyads, and questionnaires to determine postpartum depression

³ The period just before and just after birth

⁴ Immediately after birth to approximately 6 weeks post birth

and maternal reports of child behaviour, to gain an understanding of the impact maternal depression had on child behaviour problems. They observed that with the mother's depressed behaviour, including her lack of display of positive affect and her decreased responsiveness to her infant's emotions, the infant becomes less positive in its responses to its mother. Children of depressed mothers showed fewer smiles, less playfulness, more irritability and fussiness, and as they grew older, lower cognitive functioning, indiscriminate attachment, and decreased social competence (Beck, 1998; Johnson & Flake, 2007). Infants developed less social flexibility in their behaviour with their mothers, even in cases where the mother suffered subclinical levels of maternal depression (Skotheim et al., 2013).

In a between subjects study, Field (1984) examined whether the infants of depressed mothers would behave like infants of non-depressed mothers when these mothers were asked to look depressed. The control group was monitored to match the depressed group on SES, mother's educational level, mother's age, and number of children in the family. Twelve depressed infant mother dyads and 12 non-depressed infant mother dyads were videoed during face to face interactions when the infants were three months old. Naïve research assistants coded the video tapes to minimize coder bias. Depressed mothers had shown less frequent positive facial expressions, more frequent negative facial expressions, less frequent vocalizations, less time spent looking at the infant, and less time giving the infant tactile/kinesthetic stimulation. The heart rate (an objective measure which precluded examiner bias) of depressed mothers was less than that of non-depressed mothers. The infants of depressed mothers also showed less frequent positive facial expressions, more frequent negative expressions, and less frequent vocalizations, less protesting, and less looking wary, when compared to infants of non-depressed mothers. Their activity levels and heart rates were lower than those of infants of non-depressed mothers. Both non-depressed mothers and their infants reacted more strongly to the looking depressed condition than did the depressed mothers and their infants. Infants of non-depressed mothers demonstrated distress at this unexpected behaviour from their mothers. Non-depressed mothers also showed signs of distress, most likely in response to the distress experienced by their infants. Similar distress was not evidenced by the infants of depressed mothers. Field (1984) concluded that the infants of depressed mothers were mirroring her behaviour.

A carefully constructed study conducted by Dawson et al. (1999) screened potential participants to exclude all participants who demonstrated confounding factors, such as drug use by the mother, or health issues suffered by the child. Only the complete data of mother infant dyads in which the infants tolerated the objective measure, the EEG, were reported. Dawson et al. (1999) found that infants who were developing normally showed evidence of greater left versus right frontal brain activity. However, the infants of depressed mothers

demonstrated reduced left frontal compared to right frontal activity. These findings are of concern because the left frontal region is associated with positive emotions and approach, while the right frontal region is associated with negative emotions and avoidance. This finding suggests that maternal depression has an effect on the area of the brain responsible for expression of positive emotion not only towards the depressed mother, but also towards another familiar adult. The depressed mother's behaviour has influenced her infant's brain development so that the infant's brain becomes wired in a way that is different from the brains of children whose mothers are not depressed. Taken further, these results may suggest that these abnormal EEG patterns reflect the development of stable depressive traits.

Using a representative sample of mothers enrolled in the Brazilian National System of Public health, Pinheiro et al. (2011) conducted a cohort study of 397 women (40% of deliveries for that particular period) examining maternal postpartum depression and infant sleep disorders. After controlling for potential confounds, they found that babies of mothers with severe chronic depressive symptoms also showed a higher risk of suffering from a sleep disorder at age 12 months. As children of mothers who suffered postpartum depression grew, they showed poorer language development and more behavioural problems including temper tantrums (Beck, 1998; Cox, Puckering, Pound, & Mills, 1987; Johnson & Flake, 2007; Quevedo et al., 2011). By the early school period, children of mothers who had suffered from postpartum depression were showing inferior ego-resiliency, lesser social competence with peers, and poorer school adjustment (Kersten-Alvarez et al., 2012). As they grew into adolescence they demonstrated higher rates of depression, anxiety disorders, pessimism, poor peer relationships, oppositional behaviours and aggression, low self-esteem, and poor academic achievement (Hammen & Brennan, 2003; Johnson & Flake, 2007).

The results from these studies demonstrate the impact of mother's postpartum depression on infant behaviour and brain development. Taken further, these results might suggest that the infant's depressed behaviour could exacerbate an already compromised interaction between mother and child by causing the mother to become even less responsive to a depressed, avoidant, and non-responsive infant. Such a baby develops a depressed style of behaviour which it carries over to its interactions with other non-depressed familiar adults (Field et al., 1988; 1995). As a result, other adults may treat this baby differently. The infant is then socially and emotionally neglected throughout an important developmental period when developing a positive relationship with his/her mother is of the utmost importance if the child is to experience normal psychosocial development (Reck et al., 2004). Because the attainment of maternal identity is the result of the interactive and reciprocal process between baby and mother, a destructive cycle may be established that inhibits the depressed mother's efforts to attain a sense of herself as a competent and loving mother (Nelson, 2004; Rubin, 1984).

3.6. Postpartum depression in fathers

Paternal postpartum depression is under-assessed, underdiagnosed and undertreated as men generally find it difficult to seek help for emotional and psychological issues (Musser, Ahmed, Foli, & Coddington, 2013; Veskrna, 2010).

Denial of depression is actually one of the ways men may demonstrate their masculinity.
(Veskrna, 2010, p. 421)

While maternal postpartum depression has received a lot of attention, paternal postpartum depression has not (Wilson & Durbin, 2010). As a result, paternal postpartum depression and its potential consequences for the family remain relatively unknown (Musser et al., 2013). However, Musser et al. (2013) comment that there is a growing awareness of the importance of optimal paternal mental health during the postpartum period.

3.6.1. Diagnosis and incidence of paternal postpartum depression

Studies using the EPDS, a 10-point scale that asks responders to assess their feelings over the past seven days, have demonstrated that fathers do experience levels of depressive symptoms consistent with postpartum depression (Matthey, Barnett, Kavanaugh, & Howie, 2001; Ramchandani et al., 2005). However, identifying symptoms indicative of postpartum depression using this scale is controversial (Paulson & Bazemore, 2010b; Thombs, Roseman, & Arthurs, 2010). To test this controversy, Paulson and Bazemore (2010a) conducted a meta-analysis of 43 studies, involving 28,004 participants, that tested men for symptoms indicating depression from the first trimester of pregnancy until the end of the first year postpartum. They concluded that there was enough reliable evidence to indicate that depressive symptoms indicating postpartum depression were a problem for an estimated 10.4% of the men in the studies that they reviewed. The incidence of depressive symptoms was higher from three to six months postpartum (an average of 25.6% of participants). Pinheiro et al. (2006) reported that 11.9% of fathers in a population based random sample of 386 couples living in Brazil, assessed between the sixth to twelfth weeks postpartum, could be considered to be suffering levels of depressive symptoms which indicated mild to moderate postpartum depression. This gave support to the findings of an integrative review of 20 research studies which indicated that depressive symptoms typical of postpartum depression were an issue for men during the first year after a child's birth (Goodman, 2004).

3.6.2. Factors influencing paternal postpartum depression

Using the case study of a 36-year old first-time father as an illustration of other epidemiologic studies examining postpartum depression in men, Veskrna (2010) concluded

that men may feel unprepared for parenthood. This first-time father, with no previous history of psychiatric dysfunction, illustrated the difficulties faced by some men, in particular men who are becoming fathers for the first time. There is now a greater expectation that men be fully involved in parenting. Today's fathers may not have had fathers that they could use as role models to meet today's expectations of fatherhood (Condon, Boyce & Corkindale, 2004). Consequently, they may lack the knowledge, skills, and confidence that are required to parent successfully.

Bielawska-Batorowicz and Kossakowska-Petrycka (2006) hypothesized that the current situation men faced was more likely to be the trigger for depressive symptoms rather than the individual man's personality traits. Data from 80 Polish primiparous couples who provided a full set of data and met the following criteria: healthy infant three to six months old; stable relationship; no serious complications during pregnancy; and secondary or higher education, were used to examine this hypothesis. Measures included: the EPDS (Cox et al., 1987); Polish adaptation of the Eysenck Personality Questionnaire (EPQ-R) (Brzozowski & Drwal, 1994); Social support (Nieland, 1992); Marital Bonds Scale (MBS) (Szopinski, 1980); and an Expectations Scale developed for the study. Their hypothesis was supported by their findings. There was no difference on neuroticism. However, 22 fathers (27.5% of the sample) scored above the cut-off point of 13. Men with depressive symptoms reported less satisfaction with social support, their economic situation, and were younger than men who did not demonstrate depressive symptoms. Men with depressed symptoms indicated high discrepancies between prenatal expectations of childcare and the reality of childcare. Bielawska-Batorowicz and Kossakowska-Petrycka (2006) suggested that this mismatch of expectations with reality put men at a higher risk of developing symptoms indicative of postpartum depression. Another potential trigger was less satisfaction with marital relationships. Men who reported depressed partners and conflicted relationships were more likely to score above the cut-off point of 13.

A systematic review of 30 English papers, published between 1996 and 2009, conducted by Wee et al. (2011), examined correlates of depressive symptoms in men. Reports of depressive symptoms during pregnancy and the postpartum period were included. Despite the methodological limitations, including publication bias where null findings were not published, they were also able to conclude that there was acceptable evidence that a poor relationship with the partner was frequently associated with symptoms indicative of postpartum depression. Fathers who struggled with changes in their relationship and felt that there was less give and take, and less support from their partners, reported higher levels of depressive symptoms (Bost, Cox, Burchinal, & Payne, 2002; Iles et al., 2011; Meighan, Davis, Thomas, & Droppleman, 1999).

Fathers may also find that coping with a difficult child results in perceived low parenting self-efficacy (de Montigny et al., 2013). As noted above, when the mother is depressed she may struggle to form a positive relationship with her child and this may contribute towards difficult behaviour from the child. This may cause distress for the father and is a possible risk factor for postpartum depression (de Montigny et al., 2013). As well, fathers, who may also have the added responsibility of providing the primary source of household income, were also undergoing major changes in life style as they adjusted to juggling home and work responsibilities (Bielawska-Batorowicz & Kossakowska-Petrycka, 2006; Condon et al., 2004). They may be attempting to cope with this and other stressful life events without adequate, or indeed any, social support (Bartlett, 2004; Bielawska-Batorowicz & Kossakowska-Petrycka, 2006; Field et al., 2006; Gjerdingen & Center, 2003; Spector, 2006; Thomas & Upton, 2000).

If the father has suffered from depression prior to the birth of a child, the birth of a child may trigger another episode and he may remain silent because he feels it is not manly to admit what he may perceive to be a weakness (Veskrna, 2010). However, the most significant risk factor for fathers' postpartum depression would seem to be mothers' postpartum depression (Bielawska-Batorowicz & Kossakowska-Petrycka, 2006; Burke, 2003; Goodman, 2004; Meighan et al., 1999; Roberts, Bushnell, Collings, & Purdie, 2006). Bielawska-Batorowicz and Kossakowska-Petrycka (2006) measured EPDS scores for both mothers and fathers. Fathers whose partners scored above the cut-off point also scored above more often than fathers whose partners scored below the cut-off point. Meighan et al. (1999) undertook a thematic analysis of qualitative data to gain an understanding of fathers' experience when their partners suffered from postpartum depression. Data provided by the eight men interviewed revealed what a major disruption they experienced in their lives when their partners suffered postpartum depression. Fathers reported that their partners changed and felt alien, that intimacy was lost, their relationship was altered, and that he made sacrifices as he attempted to fix the problem. Fathers felt that the postpartum depression experienced by his partner put the family into crisis. He experienced a sense that his world was collapsing as he felt his loss of control of the situation. He consequently felt unable to ensure the wellbeing of his family.

In a New Zealand study set in the Wellington area, Roberts et al. (2006) also reported that men whose partners suffered from postpartum depression reported poorer psychological health, including symptoms indicating mild to moderate postpartum depression, than those whose partners did not suffer from postpartum depression. Matthey, Barnett, Ungerer, and Waters (2000) reported that when mothers suffered from postpartum depression the father had two and a half times the risk of developing symptoms at six weeks postpartum, increasing

to four point two times the risk at 12 months postpartum if the mother also showed symptoms of postpartum depression. Paulson and Bazemore (2010a) reported a moderate positive correlation between fathers' postpartum depression and mothers' postpartum depression. Veskrna's (2010) new father, who was found to be suffering depression eight months after the birth of his daughter, reported how difficult he found living with his wife's postpartum depression, giving case study support to others' findings. Postpartum depression resulted in decreased support of one parent by the other during the transition to parenthood resulting in decreased relationship satisfaction in at least one parent. This was a risk factor for postpartum depression in the other parent (Don & Mickelson, 2012; Goodman, 2004; Iles, Slade, & Spiby, 2011). Maintaining a good relationship was particularly important for the father as a protection against developing postpartum depression symptoms.

3.6.3. Consequences of paternal postpartum depression and its impact on family wellbeing

Postpartum depression can impact negatively on family health, support within the family, social and leisure activities, and marital relationships (Burke, 2003; Logsdon & Usui, 2001; Meighan et al., 1999; Roberts et al., 2006). Parents suffering psychiatric disorders place their children at increased risk of unfavourable social, emotional and developmental outcomes as well as the development of physical health issues (Felitti et al., 1998; Veskrna, 2010; Weissman et al., 2006). The magnitude of the risk for the child is similar for both parents suffering depressive symptoms because depression inhibits a parent's ability to provide consistent care for their child (Melrose, 2010). Depression affecting fathers in the postpartum period has not been as well studied as that affecting mothers, but those studies available give disturbing insights into the risk factors for the child.

To conduct a meta-analysis of studies to determine the effects of paternal depression on parenting behaviours and parent-child relationships, Wilson and Durbin (2010) searched for those studies which reported paternal depressive symptoms or diagnoses and parenting behaviours, either self-reported or interviewer assessed. Studies also had to provide enough information for them to compute effect sizes. Twenty-eight studies met these criteria (22 of these published). Depressive symptoms were measured using the Beck Depression Inventory [BDI] (Beck, Steer & Brown, 1996; Beck et al., 1961); Center for Epidemiological Studies Depression Scale [CES-D] (Radloff, 1977); EPDS (Cox et al., 1987); General Health Questionnaire [GHQ] (Goldberg, 1972); Lubin Checklist (Lubin, 1963), Minnesota Multiphasic Personality Inventory Scale 2 [MMPI] (Hathaway & McKinley, 1983); or the Symptom Checklist-90-Revised, Depression subscale [SCL-90-R] (Derogatis, 1983, 1994). While none of these studies specifically examined the effect of paternal depression on paternal parenting behaviours, they provided the information required to examine this. Wilson and Durbin (2010)

coded the parenting behaviours reported as either positive or negative and then calculated mean effect sizes for each. After controlling for moderators (descriptive sample and methodological information), they found 21 effect sizes for positive parenting behaviours and 19 for negative parenting behaviours. Wilson and Durbin (2010) concluded that despite paternal depression receiving less empirical focus than maternal depression, their meta-analysis indicated that the impact of paternal depression on parenting behaviours was similar to that of maternal depression. Depressed fathers were more likely to show less sensitivity, less emotional warmth, less responsiveness as well as greater hostility, intrusiveness, and disengagement than non-depressed fathers when parenting their children.

Using information provided by 8431 fathers as part of the Avon Longitudinal Study of Parents and Children, Ramchandani et al. (2005) examined data for children's disturbed emotional and behavioural development. Father's data provided information regarding their levels of depressive symptoms (measured using EPDS) at eight weeks postpartum and again at 21 months postpartum. They found that when fathers showed symptoms of depression at eight weeks postpartum, their children had twice the risk of hyperactivity and behavioural difficulties at age three and a half than children whose fathers did not show symptoms indicative of depression. Findings were stronger in male than female children. Although Ramchandani et al. (2005) relied on maternal report of children's behaviour for this finding, which may have reflected maternal difficulties in parenting not related to maternal postpartum depression (controlled for) in some children, these results make an important contribution to an understanding of the potential impact of paternal depression on child development.

Fathers who reported symptoms of depression were less likely to bond, to read to, or to play with their children, were more likely to use spanking as a form of discipline, and consequently the family was more likely to experience higher stress (Davis, Davis, Freed, & Clark, 2011; Ramchandani et al., 2005; Ramchandani, Stein et al., 2008; Ramchandani, O'Connor et al., 2008). In a follow-up study, Ramchandani, Stein et al. (2008) found that fathers' postpartum depression was still related to a 66% increased risk of the child being diagnosed with a psychiatric condition and nearly twice the risk of a diagnosis of oppositional and conduct disorder by seven years of age. Paternal postpartum depression, like maternal postpartum depression, results in significant psychological, social, and health care costs for the community (Edoka, Petrou, & Ramchandani, 2011).

3.7. When both parents suffer postpartum depression

Data from a national sample of 5089 American two-parent families taking part in the Early Childhood Longitudinal Study indicated that when both parents were depressed, both

were likely to regard their child more negatively (Paulson, Dauber, & Leiferman, 2006). In a longitudinal study of 199 couples examining how maternal and paternal postpartum depression impacted on infants aged four and a half months and toddlers at 45.5 months, depression of either, or both parents, especially when it continued for the first few years, was a risk factor for disturbed behaviours in toddlers (Field, 1995; Fisher et al., 2015). Maternal and paternal depression occurring when the child was a toddler was linked to both male and female child negative behaviours. Fisher et al. (2015) also suggested that long term, both maternal and paternal postpartum depression was a risk factor for later depression and conflict between the parents. Such parental behaviours may be expected to continue to impact on child wellbeing. As with the Ramchandani et al. (2005), this study relied on parental report which may have inflated reports of child behavioural problems given by parents suffering from postpartum depression. However, this study is about the impact of postpartum depression on children and that depressed parents may be judging the behaviour of their children more harshly than non-depressed parents is in itself an important issue of concern.

3.8. Financial costs to the community of postpartum depression

As well as psychological and social costs, postpartum depression is responsible for financial costs to the community. A New Zealand Health Services Assessment Collaboration (HSAC) 2008 Report by Campbell, Norris, Standfield, and Suebwongpat (2008), the most recent available, conducted an economic analysis to evaluate the potential cost of a screening and treatment programme for mothers. This was to be implemented within the Well Child Tamariki Ora Framework. The Well Child Tamariki Ora is a free service that is offered to all New Zealand children from birth to five years. While at the time of the report it was recommended that carers have mothers complete the EPDS at Well Child visits, scheduled for six weeks, three months, and six months, this was not always carried out to schedule. This failure to follow procedure had resulted in the concern that cases of postpartum depression were not being detected. The report recommended a dedicated screening programme which incorporated several screening instruments combined with a treatment programme. The estimated total cost of implementation was \$3,854,716. This incorporated costs associated with screening (\$783,519) and treatment (\$3,071,197). This exceeded the \$1,722,479 (\$304,831 for screening and \$1,417,648 for treatment) quoted as the current expenditure (2007/2008) of screening and treatment of postpartum depression in mothers in New Zealand. Considering the changes in the value of the dollar since this report was published eight years ago, that mothers suffering postpartum depression may have been missed because they developed symptoms later than six months, and that there was no similar programme for screening and treating fathers with postpartum depression, the health care costs of screening for and treating

postpartum depression would be higher today.

This incentive considers only a small aspect of screening for and treatment for postpartum depression in women. Statistics that indicated the financial costs incurred by social agencies, medical providers, and the judicial system when postpartum depression for women and men in New Zealand goes unrecognised and untreated were not available. Because research has found that postpartum depression in either or both parents has a significant impact on child and family wellbeing, common sense suggests that these costs would be significant. Should New Zealand initiate a comprehensive early health care plan for women and men suffering from postpartum depression, it has the potential to substantially reduce costs faced by other community agencies coping with the later consequences of untreated postpartum depression.

3.9. Summary

A strong, healthy, well-functioning family unit strengthens the structure of New Zealand society, while a dysfunctional family unit weakens that structure and creates issues for the individuals concerned and for society in general. Maintaining a strong healthy well-functioning family unit is dependent on a complex array of interdependent factors. This chapter indicates how interrelated and complex the factors are that influence how a family unit develops and functions. When parents have low parenting self-efficacy they are less likely to interact with their infants in an emotionally healthy way thus inhibiting their successful transition into the role of parent (Cutrona & Troutman, 1986; Paulson et al., 2006). This may affect the parenting style adopted which has been seen to impact on family life satisfaction and family wellbeing. Low parenting self-efficacy can result in self-image and hostile parenting which relies on psychological control, impacting on the child's emotional, mental, and physical health, increasing the risk for depression and antisocial behaviour and decreasing the subjective well-being of all family members (Barber, Stolz, & Olsen, 2005; Coleman & Karraker, 1997; Felitti et al., 1998). When either parent is depressed, there is a negative impact on the child's emotional, psychological, social and physical health (Dawson et al., 1999; Felitti et al., 1998; Field, 1984; Paulson et al., 2006; Wilson & Durbin, 2010). When both parents are depressed, there are increased risks of parents employing negative parenting strategies as one parent is not available to cushion the family from the effects of the other parent's depression (Melrose, 2010). When parents view themselves as competent in their role of parenting, the risk for developing postpartum depression is reduced (Coleman & Karraker, 1997). Families where parents do not suffer from postpartum depression and whose parents display high parenting self-efficacy may feel greater family life satisfaction. Comparisons of national surveys over time conducted by Diener et al. (1995) demonstrated that family life satisfaction

was correlated with happiness, thus resulting in greater subjective wellbeing.

No research was located which examined the impact of skills-based childbirth/childbirth coaching preparation on factors which impact on family wellbeing post birth. The present trial examines whether the intervention, a skills-based childbirth/childbirth coaching preparation programme, influences parenting self-efficacy, family life satisfaction, and postpartum depression for mothers and fathers.

The following chapter discusses parental identity development and the implications of birth satisfaction and other factors on parents' adjustment to their new role as a family is created.

Chapter 4 – In context – Developing parental identity and implications for families

4.1. Chapter overview

The following discusses parental identity development and its implications for family and puts the relevance and importance of the outcome measures chosen for this study into a real-world perspective. The four post birth factors, birth satisfaction, parenting self-efficacy, family life satisfaction, and postpartum depression were accordingly used as a proxy measure of parental adjustment and family wellbeing.

4.2. Becoming a parent

Becoming a parent requires openness to change, allowing the development of a new self-identity, changes in world view, and way of living (Ali, Hall, Anderson, & Willingham, 2013). Thus, caring for a new-born requires major changes in self-identity (Deave & Johnson, 2008). Such adjustments are challenging (Hollway, 2010; Shelton & Johnson, 2006).

4.3. Becoming a mother – a major developmental life event

A woman's self-identity refers to her mental image of herself as a unique and independent being (Rogan et al., 1997). The concept incorporates personality traits, attitudes, values, and behaviours specific to that woman. When a woman has a baby, she undergoes transformations in her self-identity which alter her life once and for all (Fowles & Horowitz, 2006; Rogan et al., 1997; Rubin, 1984). Her concept of self has to undergo emotional, behavioural, and sense of self changes in order to incorporate her sense of herself as a mother into her already established sense of self (Ali, Hall, Anderson, & Willingham, 2013; Mercer, 2004; Rogan et al., 1997; Rubin, 1984). She must reorganize her attitudes, learn new behaviours, and develop additional goals to meet this new challenge of motherhood while at the same time sustaining her personal integrity (Mercer, 2004). In doing this, she grows her personal identity to incorporate the role of mother, to constantly hold in awareness the needs and wellbeing of her children (Laney, 2012). She redefines who she is as an individual incorporating her children into her *intrapsychic boundaries* (Laney, Hall, Anderson, & Willingham, 2015, p. 134). How she accomplishes this will be influenced by her partner, her relationship, her personality, and the pressures she perceives of how she must behave as a mother (Paris & Helson, 2002). Thus becoming a mother, developing her maternal identity, is a major developmental life event for any woman (Mercer, 2004).

4.3.1. The process of maternal identity formation

Heuristic explanations assume that how to be a mother is instinctive, or that little girls

use their own mothers as models for maternal behaviour in their play with dolls and younger siblings (Rubin, 1984). Over a period of 20 years Rubin (1984) collected and analyzed notes on pregnancy, birth stories, and the first six weeks of motherhood, as well as field notes written by nurses monitoring pregnancies and childbirths. Data were collected from over 6000 participants from university teaching hospitals located in Chicago and Pittsburgh, making this an unusually large and quite remarkable qualitative study. By analyzing hers and others' observations, and by obtaining feedback from the women concerned, Rubin (1984) was able to distinguish recurring themes which indicated the developmental stages women went through to establish their sense of maternal identity.

Rubin (1984) defined motherhood or maternal identity as a woman's subjective sense of her ability to perform competently in the maternal role of caring for her child. While her own mother remains a woman's likely role model for both her childhood play and when she assumes the role of mother, Rubin (1984) found that the process of developing maternal identity was more complex than this. She developed a theory of four stages which she called the *tasks of pregnancy*. These involve safe passage through pregnancy and childbirth for mother and child; acceptance of the pregnancy by the mother's important others; experiencing the first movements of the child and with that accepting the reality of the child's existence; and finally, in the care she gives herself to protect the unborn child. Through these stages the mother develops an understanding of the inter-connectedness of the relationship between herself and her child.

Support to Rubin's (1984) work was given by Fowles (1999) who summarized the construct of maternal identity in the following manner:

A maternal identity is achieved when a woman sees herself in relation to this child (p. 288).

Consequently,

The full sense of maternal identity involves a shift in focus from third-person models of a child or of an expert mothering person to this child and to self in relation to this child (Rubin, 1984, p. 50).

Through this interaction with the child, the mother comes to see herself in the caring role of mother and the child is seen as having an identity of its own (Fowles, 1999; Koniak-Griffin, 1993; Rubin, 1984). There is a movement away from seeking satisfaction on her own behalf to that of seeking satisfaction in her child, his/her appearance, health, and achievements. As she reaches that stage where she has developed her sense of maternal identity, she loses awareness of the costs of self-denial and instead feels a profound pleasure in her child, and the love she bears him/her (Rubin, 1984). But at any stage of this developmental process, a disruption can

inhibit a mother's progression in developing her maternal identity. Such disruptions can have major consequences for mother, child, and family in general.

Those elements of Rubin's (1984) research which relied on the accumulation of nurse's field notes for participants as they moved through their pregnancies, childbirth, and their first six weeks postpartum were prospective and objective. This allowed a fuller picture of each woman's experiences of the whole process to six weeks postpartum without concerns about memory issues and self-report biases. However, it was not clear whether the nurses who collected the data had specific instructions as to what data to collect and when data were to be collected. Consequently, it cannot be concluded that all questions were consistent or that data were consistently collected. Collecting this type of data for 6000 participants was a huge endeavour requiring many nurses to participate as collectors. It is very likely that some were more thorough than others. The research which relied on self-report from the participants was retrospective and subjective, leaving the study open to memory failure and other biases such as wanting to be seen as a good mother. Nonetheless, the very large size of Rubin's (1984) sample gives weight to her claim that she was able to find themes and advocate stages of development that were common to every woman. That the analysis continued to demonstrate Rubin's (1984) main themes over a 20 year timeframe is indicative of the strength of her inferences. Indeed, Rubin's (1984) research has yielded a valuable theory of the stages women work through during pregnancy and in the first weeks of the newborn's life, and the tools or processes they use in order to develop their sense of maternal identity (Dore, 2001; Fowles, 1999; Koniak-Griffin, 1993). Rubin's (1984) research has provided a framework on which many other researchers have based their research (Dore, 2001; Fowles, 1999; Koniak-Griffin, 1993).

4.3.2. Maternal identity – a challenging role transformation

The birth of her baby created a new family relationship in the mother's life. As well, she had to adjust to changes in already established family relationships. Some secondary relationships were discontinued as new ones were developed. The birth of her child also altered how she functioned in her environment. Each society has cultural expectations of motherhood (Koniak-Griffin, 1993; Mercer, 2004; Miller, 2003). The culture within the society in which she lives is responsible for determining the standards of behaviour expected and accepted by the member individuals (Monaghan & Just, 2000). Society's structure as a cohesive group is dependent on these standards of behaviour (Monaghan & Just, 2000). Consequently, a woman's cultural beliefs impact on the development of her maternal identity (Mercer, 2004). She may experience inner conflict if she feels the accepted norms of mothering in her culture, however general, are not a good fit for her (Shelton & Johnson, 2006). Nonetheless, Koniak-Griffin (1993) argued that these role expectations are general only and leave it up to the woman

to develop her own individual maternal identity within a rather ambiguous set of guidelines. This lack of clarity of the new role makes the transition even more difficult for those having their first baby (Burr, 1972).

Grounded theory analysis of the experiences of 55 Australian first-time mothers as they transitioned to motherhood revealed that, once she is a mother, a woman must have the ability to adapt and apply innovative solutions to her care of the ever changing child (Rogan, et al., 1997). By the very nature of the mother-child relationship, a woman's sense of maternal identity must change constantly to meet all new challenges, including the birth of another child (Fowles & Horowitz, 2006). Being a mother requires an intelligent understanding of each child which is not based on the mother's personality traits, but is based on her perceptual experiences of her child and her openness to feedback from each child (Rubin, 1984; Fowles & Horowitz, 2006). Making such a transition can be challenging (Burr, 1972; Dore, 2001; Fowles & Horowitz, 2006; Rogan et al., 1997).

4.3.3. Factors which can inhibit maternal identity development

In a review of relevant literature, Howarth et al. (2010) found that there are a number of factors for birth satisfaction which may portend the risk of a poor outcome for the mother-child relationship, essential for the mother's maternal identity development. Among these, *inadequate childbirth preparation*, fear and anxiety, a lack of self-confidence, lack of pain management skills, and dependency on professionals have all been found to decrease satisfaction with the birth experience (Howarth et al., 2010; 2011a; Koniak-Griffin, 1993; Miller, 2003). Inadequate postpartum support, including lack of support from professionals, and an inability to see from her child's perspective, can all have a negative impact on the mother's endeavours to develop her maternal identity (Koniak-Griffin, 1993; Rubin, 1984). Klaus (1998) contends that it is possible that missing the opportunity of immediate skin to skin contact could also contribute to the difficulties that some women experience in attaining maternal identity.

For any new mother, the first few months of motherhood can be very difficult (Cronin, 2003). Most new mothers find that the reality is very different from the fantasy which has absorbed them throughout their pregnancies (Rogan et al., 1997). The new mother realizes that caring for a baby is a 24-hour job, a constant and unrelenting responsibility, and she can find this exhausting. Developing a perception of self as a competent and loving mother, and hence feeling secure in her ability to nurture her child in an appropriate and healthful manner, is a complex process requiring support (Fowles, 1999; Koniak-Griffin, 1993; Rubin, 1984). In the Western World of today, many couples having their first child are living in areas far from family and the support they could have expected in an extended family situation. Without

support from others, developing her maternal identity can be even more challenging for the new mother (Koniak-Griffin, 1993). The new mother must identify and incorporate into her mothering template those elements which will work for her in her particular situation. When in doing this, she has positive experiences in her role as mother, her identity as a good and capable mother is enhanced, but when she has negative experiences, she may lose her confidence and the development of her maternal identity may be inhibited (Paris & Helson, 2002).

4.2.4. Implications of inadequate maternal identity development

Rubin (1984) was influenced by writers such as Deutsch and Benedict who emphasized the unity of the relationship between mother and child and researchers such as Bowlby and Ainsworth who demonstrated the importance of the mother/child relationship for the future healthy psychosocial development of the child (Dore, 2001; Karen, 1994; Rubin, 1984). As part of a larger study of relationships between family dynamics and maternal adaptation, Kiehl and White (2003) supported these findings when they concluded that the mother's development of her maternal identity is put at risk when a mother does not connect with her child, again clarifying the importance of the psychosocial adaptations that occur during pregnancy and in the early days postpartum. The importance of these adaptations being successful must not be underestimated. When a mother achieves this engagement with her child, the prospect of a quality relationship between her and her child is enhanced (Fowles & Horowitz, 2006; Koniak-Griffin, 1993). The type of connection the mother achieves will either facilitate or inhibit her ability to bond with her child and consequently the development of a secure attachment between her and her child (Ainsworth, 1979; Nelson, 2004).

4.4. Becoming a father – a major developmental life event

Common sense suggests that bringing a baby into couple's relationship to create a family unit is a major lifestyle change for the father as well as the mother. Surprisingly, developing paternal identity has been a socio-cultural phenomenon that has been less studied than the development of maternal identity (Barclay & Lupton, 1999). In their qualitative study of what the transition to parenthood meant for 15 Australian men, Barclay and Lupton (1999) concluded that for first-time fathers, becoming a father involved:

[...] significant changes in self-identity and their relationship with their female partner (p. 1013).

They found that as well as renegotiating their relationships with their partners, men must also address complex and evolving emotions as they establish a bond and consequently, an

attachment relationship with their child.

4.4.1. The process of paternal identity formation

The search for relevant literature gave little information similar to the research conducted by Rubin (1984) on the processes fathers undergo as they develop their sense of paternal identity. Content analysis of data provided by 20 men from South-West England led Deave et al. (2008) to conclude that while it is agreed that the transition fathers face is challenging, and while most fathers welcome the changes fatherhood brings, they may feel unprepared for the responsibilities of parenting. The more distant role models of their own fathers may have left their childhoods missing this contact and, as adults about to become fathers, without adequate role models of fatherhood. Understanding this transition would be enhanced if the psychological processes men need to work through in adjusting to this new role were better understood (Barclay & Lupton, 1999).

4.4.2. Paternal identity – a challenging role transformation

Research reveals that the Western World has seen social and cultural changes in the expectations placed on men as they become fathers. Interviews with 30 new fathers aged from 18 years to 35 years, living in Norfolk, UK, led Henwood and Proctor (2003) to infer that a father is expected to be caring, nurturing, understanding, approachable, and supportive, able to work with his partner as part of a childrearing team, as well as willing to take a more active role in the running of the household. If the father has assumed the traditional role as provider, he must maintain this role as well as fulfill expectations that he will also be *guide, household help, and nurturer* (p. 1013). Census data indicates 60% of American men still retain the role of primary provider for the family (Wang et al., 2013). Barclay and Lupton (1999) maintained that many men struggle to find an acceptable home-work balance that enables this new perception of fatherhood. Consequently, this new perception of fatherhood is not without its difficulties and some men struggle with the transition (Barclay & Lupton, 1999; Castle, Slade, Barranco-Wadlow, & Rogers, 2008; Henwood & Procter, 2003).

To complicate matters further, many men feel unsure of the expectations their partners have of them in their new role as father which may result in first-time fathers experiencing fear about becoming a parent (Deave et al., 2008). McBride et al. (2005) used data from self-report survey instruments measuring involvement variables, perceived role investment, and beliefs about the role of the father, plus data extracted from interviews, to determine whether the mother's perception of the role of the father influenced his involvement with parenting his children. Regression analysis found that maternal expectations placed on each father differed depending on the mother's perception of what the role of father entailed. These correlational

results cannot be considered conclusive, particularly with such a small sample (n = 30 couples) composed of predominantly tertiary educated career couples. However, they do raise some interesting questions regarding the development of the father's paternal identity and suggest that further research into the mother's impact on the father's transition to fatherhood could give valuable insights into the development of the father's perception of what his parenting role is in the family.

4.4.3. Factors which can inhibit paternal identity development

Forum discussion groups for expectant fathers, conducted in Australia by Friedewald (2007) indicated that fathers have expressed the need to be a part of the process of pregnancy and childbirth. This relates to the change seen in the perceived role of father (Castle et al., 2008; Deave & Johnson, 2008; Henwood & Procter, 2003). Bradley (1996) maintained that the father should attend the childbirth. He argued that the woman was bringing the father's baby into the world and he had the right to have an intimate part in this process. That fathers be involved in the pregnancy and childbirth gained further support in the findings from a qualitative study by Deave et al. (2008). Content analysis of the semi-structured interviews of 20 first-time fathers indicated that fathers had issues similar to those of their partners. These included the need for support mechanisms, more inclusion in antenatal activities, especially the need for information, such as information about breast feeding, how to care for a baby, and the changes they can expect in their relationships with their partners after the child is born. Men felt they were without the support mechanisms available to their pregnant partners, often leaving them feeling isolated and without the role models and guidelines that would have enhanced their journey into fatherhood (Deave & Johnson, 2008). Castle et al. (2008) found that fathers-to-be needed social support during their partner's pregnancy as much as did their pregnant partners. At six weeks postpartum, those fathers who reported that they had had sufficient supportive social contacts during their partner's pregnancy also reported significantly less emotional distress than those fathers who had had to manage without. Castle et al. (2008) concluded that effective antenatal social support during pregnancy may be a protective factor for father's psychological health.

Fathers also expressed frustration at what they felt was a lack of information during the antenatal period specifically for men becoming parents for the first time (Deave & Johnson, 2008). They found that fathers would have liked greater antenatal involvement with at least some content which also addressed the issues they faced. While there were plenty of flyers and books on pregnancy and childbirth, men felt that these were of more benefit to mothers and did not help them to prepare for either childbirth or for their new role as fathers (Deave & Johnson, 2008).

Before the child is born, men are often stressed because they are unsure of their childbirth role but are driven to be present by their perceptions of cultural expectations (Johnson, 2002). Eleven randomized control trials of doula support were examined by Klaus and Kennell (1997) who found that when the doula was present there was an increase in the father's interaction with his labouring partner. While the father's role may not have been clear, this finding suggests that the support the doula was providing gave him an idea of how he too could offer support. This active participation of the father may suggest the beginning of parenting teamwork, a component of healthy psychosocial family functioning.

Labour pain often left men feeling excluded and anxious about what was happening for their partners (Deave & Johnson, 2008). Using a semi-structured interview format and grounded theory analysis, Chapman (2000) revealed that men tended to find it very difficult to cope with the changes they witnessed in their partners during childbirth as well as with the pain she endured. Because he has not been clear about what to expect, the father felt excluded when his partner was focused internally and frustrated and helpless when his partner was experiencing difficulty in coping with labour pain. Chapman (2000) found that giving labouring women epidurals to relieve the pain resulted in the fathers feeling that their partners had been brought back to them.

Men also wanted detailed information on practical aspects of child care, information they felt they could safely rely on. Boyce et al. (2007) asked 312 expectant fathers to complete a series of psychological functioning assessment questionnaires. After identifying key variables associated with reported stress, they concluded that providing men with more information regarding pregnancy, childbirth and parenting would be a positive step in assisting these men to overcome their anxieties.

Men also felt a lack of information was available to prepare them for the changes in their relationships with their partners (Deave & Johnson, 2008). Changes in the father's relationship with the mother of his child were generally unexpected and difficult for the fathers. While men expected sleep patterns to be disrupted by a new baby, the stress a new baby's demands caused on their relationships was difficult for them and not helped by the new parents feeling too tired or too short of time to talk about these issues (Deave & Johnson, 2008). Fathers felt that they needed to begin their preparations for parenthood, including the relationship changes they could expect, before the baby was born.

Henwood and Procter (2003) outlined other issues that men had to address, including sacrificing their own needs for the sake of their children. They also needed to work through negotiation with their partners to ensure both felt the division of household labour was fair and equitable. Who made the decisions about childcare was another issue, made more difficult for men who worked away from home. Some men felt uninvolved when decisions were made

without their input (Henwood & Procter, 2003).

Six of the above studies reported were qualitative studies which examined new fathers' experiences of and responses to the changing sociocultural expectations of them in their role as fathers. They found a range of issues influencing father's identity. However, there has been limited research in this area and the reliance on qualitative research means it is unclear how representative these findings are. What is clear is that *inadequate preparation* remains an issue (Deave et al., 2008).

4.4.4. Implications of inadequate paternal identity development

The role adaptations that men faced and for which they felt unprepared were challenging and, combined with the changes in their relationships, left men feeling apprehensive about the new role of parent, despite having positively anticipated fatherhood (Barclay & Lupton, 1999; St. John, Cameron, & McVeigh, 2005). Some men had concerns that they would struggle to make these changes (Henwood & Procter, 2003). Boyce et al. (2007) found that those first-time fathers who did not have sufficient knowledge and understanding of pregnancy, labour and delivery were at risk of feeling psychological distress. They struggled in the early months of fatherhood to meet the challenges of this new role, in fitting this new role with their initial sense of self, including work and relationship identities and responsibilities, and in establishing a new self-identity to fit with the changes which had occurred in their lives (Barclay & Lupton, 1999). Such difficulties added to their lack of confidence in their abilities to cope with the new demands being made on them (Castle et al., 2008; Deave et al., 2008). As a result, the helplessness and dissatisfaction that the new father may experience can cause him distress which may then impact on his attempts to develop his sense of self as a father and consequently negatively influence his relationship with his child (Greenhalgh et al., 2000). Because men were commonly not given the opportunity discuss their apprehensions, these remained unresolved (Friedewald et al., 2005).

How the father handles the changes he must make in self and lifestyle will either enhance or inhibit both his own and his partner's efforts to attain a sense of themselves as parents (Greenhalgh et al., 2000). Feeling better about his experience of his partner's pregnancy and the birth of their child could assist the transition to family with child for the father and thus encourage him to be a supportive partner for the new mother (Castle et al., 2008). This in turn could assist the mother in her endeavours to develop a sense of herself as an effective and loving mother. Thus the prospect of a quality relationship between her and her child is enhanced, as is her ability, and the father's ability, to bond and consequently develop secure attachments with their child (Fowles & Horowitz, 2006; Koniak-Griffin, 1993; Nelson, 2004). Consequently, the prospect of a healthy family unit is enhanced.

4.5. The role of birth satisfaction as a contributing factor to both maternal and paternal identity development and wellbeing

When a mother is dissatisfied with her childbirth experience, or even feels she has been traumatized by her experience, her attempts at mothering her child may be compromised (Koniak-Griffin, 1993; Rubin, 1984; Waldenstrom et al, 2004). The impact of problems with mothering on her child can be severe and long lasting (Nelson, 2004). She may even develop such a severe problem with her mothering that it has negative psychosocial consequences for her, her child, and her family as a whole (Koniak-Griffin, 1993; Mercer, 2004; Nelson, 2004; Rubin, 1984). However, the impact of childbirth dissatisfaction is not restricted to the mother's adjustment alone.

Using quantitative methodology in which 78 fathers completed several questionnaires, Greenhalgh et al. (2000) found that how the father experienced his partner's labour and delivery may put the father's later psychosocial wellbeing at risk. Fathers who had a positive experience of childbirth were more likely to have no symptoms of depression at six weeks postpartum compared to those who had unmet expectations of their birthing experience. In particular, the necessity of a caesarean delivery impacted negatively on the father's perception of the birth of his child (Greenhalgh et al., 2000). When a father's expectations for the birth of his child were not met for some reason he did not experience fulfilment or happiness. This failure to feel a sense of fulfilment was found to be the important factor relating to depressive symptomology and increased difficulties experienced by the father in developing his paternal identity (Castle et al., 2008; Deave & Johnson, 2008; Greenhalgh et al., 2000).

4.6. Satisfaction with the birthing experience eases parents into the reality of parenthood

Callister (2004) contended that during pregnancy and in the first weeks of the infant's life, a woman's reflections on her pregnancy and birth narrative described her journey into motherhood. A mother's birth satisfaction may be influenced by her self-efficacy, lack of fear, her perception of personal control during childbirth, her perception she has managed pain well, meeting her birth expectations, being alert and able to interact immediately with her infant, and the characteristics of care provided (Klaus, 1998; Koniak-Griffin, 1993; Rubin, 1984; van Teijlingen et al., 2003). In a review of literature reporting behavioural and physiologic observations of infants and mothers, Klaus (1998) supported the importance of both mother and baby being alert immediately after birth, given that the bonding process may be assisted by the release of the hormone oxytocin into the systems of both mother and child during birth. He also commented that oxytocin release is further stimulated for both during breastfeeding and skin-to-skin contact. Klaus (1998) also noted that allowing the

infant to remain with the mother reduces the indications of distress displayed by the infant. Mothers able to interact positively with their infants immediately after birth have been found to be more positive about their infants and to feel more confident in handling their infants at six weeks postpartum. Thus if her birthing experience is positive, a woman is more likely to develop a positive, interactive and reciprocal relationship with her child and the development of her maternal identity will be enhanced (Nelson, 2004; Rubin, 1984).

Deave and Johnson (2008) reported that being involved in the antenatal provisions, being well informed about what to expect during labour and birth, feeling he has a role to play during labour and birth and knowing what it is, and feeling he has his own support network dedicated to his needs, can enhance a father's perception of the birth of his child. In an earlier but similarly designed study, Johnson (2002) reported similar findings for 20 fathers living primarily in the Midlands of England. Both would agree that a positive experience can positively influence his relationship with his child and hence enhance his efforts to develop his paternal identity.

4.7. Summary

When a child is born to create a new family unit, both parents have major self-identity and life style changes to make (Deave & Johnson, 2008; Rubin, 1984). The adjustments can be challenging with the reality of caring for a new-born not matching preconceived fantasies (Hollway, 2010; Miller, 2007; Shelton & Johnson, 2006).

Lack of clarity of the new role of mother and inner conflict experienced as a result of her perception of society's expectations of this new role can inhibit her efforts to develop her maternal identity, whereas positive experiences of parenting can enhance her transition (Burr, 1972; Majewski, 1986; Paris & Helson, 2002; Shelton & Johnson, 2006; Williams et al., 1987). The process of maternal identity development has been well examined and found to be complex and sensitive (Dore, 2001; Fowles, 1999; Rubin, 1984). She will have arrived when her skills and behaviours make her, in the words of Winnicott, *a good-enough mother* (as cited by Karen, 1994, p. 356). When the woman has accepted herself as a good-enough mother, she can be said to have developed a sense of maternal identity. When she makes these changes successfully, the child's ability to develop a secure attachment is enhanced (Ainsworth, 1979; Nelson, 2004).

While one woman may adjust easily to her new role, another will find great difficulty in changing her lifestyle sufficiently to develop those skills and behaviours expected of mothers by her particular culture. Some women may never get there. Those factors which may put the mother's adjustment at risk include a lack of self-confidence and inadequate preparation for childbirth, and dependency on professionals during childbirth; low birth

satisfaction; inadequate postpartum support; and an inability to see from her child's perspective (Howarth et al., 2010, 2011a; Koniak-Griffin, 1993; Miller, 2003; Rubin, 1984). There can be severe psychosocial consequences for mother, child and family if a woman fails to see herself as a good-enough mother (Kiehl & White, 2003).

Becoming a father is also a challenging lifestyle change, including self-identity and relationship changes, although this has been less studied than the development of maternal identity (Barclay & Lupton, 1999). Today he is expected to be much more involved in childcare and the running of the household than in previous generations. This new perception of fatherhood is not without its difficulties and some men struggle with the transition (Barclay & Lupton, 1999; Castle et al., 2008). New expectations and changing relationships leave some men apprehensive about fatherhood (Barclay & Lupton, 1999; Henwood & Procter, 2003). This is exacerbated by fathers feeling that their needs at this time are not adequately addressed (Deave & Johnson, 2008). How well the father makes these adjustments will impact on both his, and the mother's, development of their parenting identity, which in turn impacts on the child's ability to make secure attachments with his/her parents (Fowles & Horowitz, 2006; Koniak-Griffin, 1993; Nelson, 2004).

Moving from a couple relationship to motherhood, fatherhood, and family is a complex process influenced by many factors. One of the factors known to play an important role in this process of adjustment is a satisfactory childbirth experience, not only for the mother, but also for the father. When parents can look back on the birth of their child with a sense of satisfaction and expectations met, the prospect of each parent being successful in his or her personal role transition is greatly enhanced. And so the factors that contribute to a satisfactory birth experience, including childbirth/coaching preparation which contributes to childbirth/coaching self-efficacy, take on implications of greater significance than birth satisfaction alone. These factors appear to play a crucial role in the family's ability to make the psychosocial adjustments necessary to function positively, happily and cohesively within the society in which the parents live.

The following and final chapter in the introduction introduces the overall rationale for this research project and the rationale for the selection of a new concept in childbirth preparation. It presents the overall project design along with the rationales, designs, aims, research questions, and hypotheses for each component of this research project.

Chapter 5 – Research project overview

5.1. Chapter overview

The preceding chapters have reviewed research which contributed towards the development of the hypotheses for this research project. Topics included childbirth self-efficacy, pregnancy anxiety, birth satisfaction, parenting self-efficacy, family life satisfaction, and postpartum depression, and how these six factors related to each other and their consequent effect on parent identity formation and family wellbeing. This chapter briefly discusses the rationale for the current research project and how the pilot study provided the rationale for the selection of the self-teach skills-based childbirth/childbirth coaching preparation programme, *The Pink Kit Method for Birthing Better*® (Common Knowledge Trust [CKT], 2001) as the intervention in the randomised controlled trial. Finally, the chapter summarizes the rationales, designs, aims, research questions, and hypotheses of the four components of this research project.

5.2. Rationale for the current research project

While there are many studies of pregnancy, childbirth, and early parenting for mothers, these are predominantly overseas studies which do not reflect New Zealand's current unique midwifery driven maternity system. There are few New Zealand studies which have examined childbirth related factors for New Zealand women, let alone what constitutes adequate childbirth preparation. A search of article databases failed to turn up any peer reviewed articles for New Zealand men. Internationally, there are very few papers which report the father's experiences of pregnancy and childbirth. Those few are predominantly qualitative studies with small sample sizes, meaning the findings cannot be generalized.

The current research project was developed to examine the impact that an intervention programme which addressed the childbirth preparation needs mothers identified in the pilot study on the outcome measures selected because of their known impact on individual and family wellbeing when a first child is born. Common sense suggested that the birth of a first child would also impact on the New Zealand father. This research project also planned to examine the impact of childbirth preparation appropriate for his role on the same outcome measures for the father. It was hoped to significantly add to the understanding of the New Zealand woman's experience of becoming a mother as well as the New Zealand father's experience of becoming a father.

5.3. The pilot study

The pilot study, *First-time birth experiences within the New Zealand midwifery driven maternity system* (Howarth, 2010), was conducted to gain an understanding of the labour and childbirth experiences of ten first-time mothers living in New Zealand. Three major themes emerged: *taking personal responsibility*; *relationship issues*; and *safety net*. *Taking personal responsibility* indicated the importance of childbirth preparation. The other two themes also indicated important aspects of this preparation.

5.4. The intervention *The Pink Kit Method for Birthing Better*®

5.4.1. Rationale for selection

The findings from the pilot study formed the basis for the requirements considered in the search for an intervention to improve childbirth/childbirth coaching self-efficacy for first-time parents. An examination of *The Pink Kit Method for Birthing Better*® (CKT, 2001) programme found that the objectives of this skills-based childbirth/childbirth coaching preparation programme addressed the three themes which emerged in the pilot study. Firstly, it claimed to develop a skilled birthing population through *taking personal responsibility* to self-teach the knowledge and the birthing skills that would enable the mother to maintain personal control throughout an uncomplicated birth, thus increasing her childbirth self-efficacy. In addition, it also included birth coaching skills for the father. These were to enable him to understand what was happening for the mother and be aware of when and how she needed him to support and coach her, particularly if she lost focus. Thus, his support and childbirth coaching self-efficacy would be increased. Secondly, it claimed to offer the skills required to develop teamwork resulting in deeper relationships by developing personal communication skills, and the ability to communicate clearly with others throughout the childbirth process. Thirdly, it claimed to develop an understanding of *safety* issues and medical interventions appropriate for any potential complications which may develop along with which skills were appropriate for each situation as well as how and when to use them.

5.4.2. Childbirth/childbirth coaching preparation – skills for childbirth

This self-teach skills-based childbirth preparation approach contrasts with a reliance on medical expertise, although it welcomes this expertise when necessary (CKT, 2001; Lubell, 2008a; 2008b). It is a new and untested approach to childbirth preparation. The concept of birthing skills evolved as a result of the need for more choice expressed by expectant mothers and fathers from extremely diverse backgrounds (Lubell, 2008b). Mothers wanted to be prepared so that they felt more in control, even when medical intervention became necessary. Expectant fathers wanted to be prepared so that they knew how to help their partners. Mothers

and fathers also wanted to work as partners with those providing any medical care deemed necessary. Learning skills increased a woman's options thus giving her greater choice in preparing herself. She could select and apply the birthing skills appropriate for her own needs, thus giving her more control. Learning skills gave the father choice in selecting and applying childbirth coaching skills appropriate for his partner's needs, thus increasing his ability to help the mother. Lubell (2008a, 2008b) proposed that childbirth skills were adaptable to the needs of every woman - from unexpected births at home alone, to emergency deliveries, to elective operative deliveries. The developer of the programme makes strong claims about the programme's effectiveness in preparing both parents for labour and delivery.

An inspection of childbirth preparation in New Zealand, plus discussion with the intervention developer, indicated that a skills-based childbirth/childbirth coaching preparation programme, such as that advocated in the *The Pink Kit Method for Birthing Better*®, was not part of any current New Zealand childbirth preparation provider's antenatal class programme. Consequently, both because of its claims, and the lack of a strong alternative, it was chosen as the intervention for this trial.

5.4.3. Aim of the childbirth preparation kit

The aim is to develop a skilled birthing population of women by providing the information a she needs to self-teach herself birthing skills, thus increasing her childbirth self-efficacy. It also aims to provide the support person (father, relative, friend) with the information and skills required to undertake the role of coach to the woman throughout her labour and childbirth, thus increasing childbirth coaching self-efficacy.

5.4.4. *The Pink Kit Method for Birthing Better*®: the claims and potential for further benefits

The developer of this skills-based childbirth preparation programme claimed that by using a skills-based approach to birth preparation, parents would have skills, as well as knowledge, which would increase their childbirth/childbirth coaching self-efficacy. She deduced that an increase in childbirth self-efficacy had the potential to reduce pregnancy anxiety and enhance a satisfying birth experience. She also confirmed that the programme contained skills which she labelled life skills, for example, the communication and teamwork skills which were presented. These aimed to increase the confidence of parents in their ability to understand each other, communicate positively, and work together as a team for the labour and delivery. She indicated that such life skills could have far reaching benefits as they were transferable to other areas of life, including impacting positively on parenting self-efficacy. If this was the case, would parents, who felt good about how they parented their children, experience greater overall family life satisfaction? And, if parents had positive experiences of

a well-managed birth, successful early parenting, and higher satisfaction with family life, would the incidence of postpartum depression be decreased? While her focus was on upskilling pregnant couples for labour and delivery, she considered the impact of a programme such as *The Pink Kit Method for Birthing Better*® could have such far reaching effects on family life.

It is also claimed that a skills-based approach to childbirth preparation would be of benefit to midwives because the stress experienced when working with overly dependent clients would reduce because mothers and fathers were taking more independent roles in the mother's birthing process. This is of concern because anecdotal evidence suggests that the stress experienced by some midwives in private practice is causing them to leave midwifery (Mussen & Mathewson, 2015). In some areas, for example, the Wellington region, some pregnant women have been unable to engage a midwife in private practice. These women must then seek maternity care through the hospital system. This is unlikely to provide them with care from the same midwife throughout their pregnancies, nor is it guaranteed these women will have a familiar midwife on duty when they go into labour.

A skills-based approach to childbirth preparation has not previously been tested for its effectiveness in increasing childbirth/childbirth coaching self-efficacy, nor for its potential to impact on the other five outcomes (pregnancy anxiety, birth satisfaction, parenting self-efficacy, family life satisfaction, postpartum depression) examined in this trial. The present trial aims to contribute to current knowledge by examining if a skills-based approach to birth preparation, such as that presented in *The Pink Kit Method for Birthing Better*®, impacts positively on the experiences of the mother and the father on these outcomes, and on the work-related stress experienced by midwives. The present research project contains the first trial to examine the experiences of those mothers and fathers who have used *The Pink Kit Method for Birthing Better*® childbirth preparation package, either in New Zealand or overseas.

5.5. Rationale for Birth stories booklet

A collation of birth stories reflecting different modes of births was issued to participants in the Active Control Group. Its purpose was to exclude the possibility that any findings attributable to the intervention were not the result of participants believing material they were issued in a study, that having something extra to do, would be effective (placebo effect) regardless of their actual effectiveness. A booklet of birth stories was selected as the control intervention because mothers in the pilot study had expressed dissatisfaction with the limited number and type of birth stories which they had seen during their pregnancies.

5.6. Research project design

This is a mixed design research project incorporating both quantitative and qualitative analyses. Data collected in the randomized controlled trial questionnaires also supports three further analyses, including both quantitative and qualitative methodologies. This combination of qualitative (exploratory approach) and quantitative (confirmatory approach) data provided an opportunity to balance the limitations of one type of data with the strengths of the other. The outcome **birth satisfaction** incorporated both approaches. This allowed a better understanding of the whole picture by combining different ways of gaining an understanding of the participants' childbirth experiences. The strength of the quantitative data lay in participants reporting how satisfied they were with each aspect of their childbirth experience, as well as an overall childbirth satisfaction rating. This data allowed a statistical analysis which compared groups in the trial to determine whether the intervention had been effective. The strength of the qualitative data lay in its phenomenological description of why participants scored each aspect of their childbirth experience as they did. The understanding of the quantitative data, which did not indicate why participants scored as they did, was enriched as more information was shared.

This research project has four components which examined the experiences of pregnancy, childbirth, and early parenting from both first-time mothers' and first-time fathers' perspectives. The following summarises the rationales, designs, aims, research questions, and hypotheses of each component of this research project.

5.7. Primary purpose of this research project – a randomized controlled trial

5.7.1. Rationale of the randomized controlled trial

The randomized controlled trial design is a controlled experiment which makes comparisons between two or more groups using quantitative methodology (Sullivan, 2011). This method was used to investigate the effectiveness of the intervention, *The Pink Kit Method for Birthing Better*®, which had not been subjected to systematic, scientific evaluation. A randomised controlled trial was the most rigorous way of determining whether a cause-effect relationship existed between the treatment and the six outcome variables. The analysis was focused on estimating the size of the difference in predefined outcomes between the intervention group and two control groups.

5.7.2. Design of the randomized controlled trial

This trial made use of three conditions. These include, firstly, the Intervention Group (issued *The Pink Kit Method for Birthing Better*® intervention at 24 weeks gestation); secondly, the Active Control Group (issued a collation of varied birth stories at 24 weeks gestation);

and the Passive Control Group (no material issued). All groups were asked to continue with anything else they had planned or found suitable for their needs at any stage of their pregnancies, labours and deliveries.

Outcomes other than birth satisfaction were measured twice. A 3 X 2 repeated measures ANOVA with Group as between subjects variable, and Time as within subjects variable, was planned to test the effectiveness of the intervention over time. A paired t-test was planned to examine any differences if there were any significant interactions between Group and Time. A one-way ANOVA was planned to test the effectiveness of the intervention on birth satisfaction, and the other five outcomes at Time One and Time Two. Tukey HSD post hoc test was planned to examine any statistically significant findings.

5.7.3. Aim of the randomised controlled trial

This trial aimed to examine the effectiveness of skills-based childbirth preparation approach for first-time parents in New Zealand. The primary outcome was **childbirth/childbirth coaching self-efficacy assessed at 36 weeks gestation**. Secondary outcomes included: pregnancy anxiety assessed at 36 weeks gestation; birth satisfaction assessed post-birth; parenting self-efficacy assessed at six months; family life satisfaction assessed at six months; and postpartum depression assessed at six months.

5.7.4. Research questions of the randomized controlled trial

The primary research question was: Will the intervention prove effective in increasing childbirth/childbirth coaching self-efficacy between Time One and Time Two for both parents in the Intervention Group compared to the Active and Passive Control Groups and will groups be different at Time Two?

Secondary research questions included: Will the intervention prove effective in increasing parenting self-efficacy and family life satisfaction between Time One and Time Two for both parents in the Intervention Group compared to the Active and Passive Control Groups and will groups be different at Time Two? Will the intervention prove effective in decreasing pregnancy anxiety and depression/postpartum depression between Time One and Time Two for both parents in the Intervention Group compared to the Active and Passive Control Groups and will groups be different at Time Two? Will the intervention be effective by showing greater birth satisfaction for both parents in the Intervention Group compared to the Active and Passive Control Groups?

5.7.5. Hypotheses of the randomized controlled trial

The hypotheses stated that, for childbirth/childbirth coaching self-efficacy and the

other four baseline/outcome comparisons, the intervention would be more effective at improving the scores for both the mothers and the fathers in the Intervention Group, compared to the scores for each parent in each of the control groups.

The hypothesis for birth satisfaction stated that the intervention would more effective for improving the scores for both the mothers and the fathers in the Intervention Group, compared to the scores for each parent in each of the control groups.

5.8. A qualitative data analysis

5.8.1. Rationale of qualitative data analysis

A quantitative survey questionnaire limits the participants' responses to choices to those selected by the researcher. These responses are not always a perfect fit for a participant and can make answering such a questionnaire a frustrating experience. Quantitative responses are also limited in their capacity to describe and explain the impact of the experiences the quantitative tool is measuring. Starting a family is a major lifestyle change, a time when parents are making major adjustments and seeking to understand their own experiences and have their own questions answered (Rubin, 1984). While the quantitative tool in the third questionnaire measured the degree of birth satisfaction participants experienced during the encounters and events surrounding the birth of their child, culminating in an overall score for birth satisfaction, it did not describe the implications of and affects that these experiences had on individual participants.

The idea to include both quantitative and qualitative analyses in the third questionnaire was derived from the 2007 Maternity Services Consumer Satisfaction Survey Report (Ministry of Health (MOH), 2007). This survey included both a quantitative survey and three open-ended questions inviting participants to comment on aspects of their maternity care experience. Not all participants completed this section of the questionnaire. Responses from those who did respond were then divided into response categories which were then analysed to find patterns in the data. A report was generated from these responses. Using a similar, though not identical, approach was considered an appropriate methodology for this research project. A mixed methodology similar to the one used in the current research project was also used by Johansson, Rubertsson, Rådestad, and Hildingsson (2012) who also analysed comments made on a written questionnaire.

5.8.2. Design of qualitative data analysis

The Mackey Childbirth Satisfaction Rating Scale New Zealand Adaptation (Goodman et al., 2004) measure was an ideal instrument for the collection of both quantitative and qualitative data as built into this instrument was the option of providing comments in

response to all questions. As required by a qualitative survey, each quantitative question was converted to an open-ended format by inviting participants to express their own personal experiences and interpretations of these. Opportunity was also given to comment on aspects of their experiences not covered in the quantitative questions. Other additional qualitative data that the mothers and/or fathers included with their questionnaires, including unprompted birth stories written for the project and emails, were also included.

5.8.3. Aim of the qualitative data analysis

The qualitative analysis of participants' comments related to birth satisfaction aimed to give a greater understanding of what experiences led to the level of birth satisfaction the participant reported in the quantitative section of the Mackey Childbirth Satisfaction Rating Scale New Zealand Adaptation (Goodman et al., 2004). This analysis aimed to clarify and develop findings of the pilot study (Howarth, 2010). As there is very little research that examines the mother's childbirth experiences in New Zealand and no known research which examines the New Zealand father's experiences of the labour and delivery of his child, it is anticipated that this analysis will build on the limited research available and identify themes for future research.

5.8.4. Research question of the qualitative data analysis

What does the qualitative analysis of the comments which relate to the childbirth experiences of the mother and the father reveal?

5.8.5. The qualitative data analysis - exploration

Participants were given the opportunity to elaborate on their experiences of labour and childbirth. An exploration of the data was made across the data corpus obtained by combining data from the three groups to give a more in depth understanding of the experience of childbirth in New Zealand (Braun & Clarke, 2006). This phenomenological thematic analysis may also be helpful in identifying those aspects of the New Zealand maternity care system which are not adequately meeting the needs of the consumers. Combined with the information gained from the quantitative analysis of the six outcome variables, these data may be used for further research with the aim of considering potential improvements to the maternity care system, and developing interventions that have the potential to assist individual mothers and fathers to successfully and happily adjust to parenthood.

5.9. A post-hoc analysis

5.9.1. Rationale of post hoc analysis

Life experiences are made up of a complex association of factors. While one factor, for example, the intervention used in the present trial, may impact on an outcome, it is unlikely to be the only factor influencing that outcome. This research project considered the possibility for exploration of potential relationships between other factors and the outcomes of interest after the completion of the experiment. To make this possible, data other than the six trial outcome measures was collected. While this data was collected from questions formulated based on information taken from the readings, the exact nature and structure of any post hoc analysis, including this one, could not be determined until after the completion of the experiment. Results from trial data and qualitative analyses, combined with findings taken from the readings, were expected to assist in determining any appropriate post hoc analyses. The following reports the further analyses deemed appropriate post hoc.

5.9.2. Design of post hoc analysis

This analysis combined data gathered in the trial across the three groups to explore for predictors of/associations with the four post birth outcome variables (birth satisfaction; parenting self-efficacy, family life satisfaction, and postpartum depression, all at six months post birth). A hierarchical multiple regression analysis was used as the sample size proved adequate.

5.9.3. Aim of post hoc analysis

The purpose was an examination of potential prognostic variables, while controlling for the effects of the intervention, to determine if early markers predicting/associated with difficulties for the four post birth outcomes could be identified. Identifying such early markers has the potential to be used to develop appropriate early interventions which could be applied before the birth and in those first few weeks post birth.

5.9.4. Research question of post hoc analysis

What factors will predict or be associated with birth satisfaction, parenting self-efficacy at six months, family life satisfaction at six months, and postpartum depression at six months for the mother and the father after controlling for the intervention?

5.9.5. Hypotheses of post hoc analysis

Hypothesis 1: Demographic and pre-birth factors which are expected to predict birth satisfaction for mothers and fathers included the following: age; marital status; education;

work status; income; ethnicity; trait anxiety; pregnancy related anxiety; depression; childbirth/coaching self-efficacy; family life satisfaction; expectations about labour pain, pain distress, and labour length; expectation about childbirth distress; expecting to use and find useful non-medicated pain management; expecting to have an epidural; and expectations of medical interventions, including induction, instrumental delivery, and caesarean section.

Hypothesis 2: Birth factors which are expected to be associated with birth satisfaction for mothers and fathers included the following: pain and pain management factors including non-medicated and epidural; medical intervention factors including induction, caesarean, and other interventions; labour and birth expectations (met or not); and antenatal and parenting class factors.

Hypothesis 3: Demographic and pre-six month factors which will predict parenting self-efficacy, family life satisfaction and postpartum depression at six months for mothers and fathers included: age; marital status; education; work status; income; ethnicity; trait anxiety; pregnancy anxiety; depression; childbirth/coaching self-efficacy; family life satisfaction; expectations about labour pain, pain distress, and labour length; expectation about childbirth distress; expecting to use and find useful non-medicated pain management; expecting to have an epidural; expectations of medical interventions, including induction, instrumental delivery, and caesarean section; pain and pain management factors including non-medicated and epidural; medical intervention factors including induction, caesarean, and other interventions; labour and birth expectations (met or not); antenatal and parenting class factors; and birth satisfaction.

Hypothesis 4: Six-month factors for mothers and fathers which will be associated with parenting self-efficacy at six months included family life satisfaction and postpartum depression at six months; factors associated with family life satisfaction at six months included parenting self-efficacy and postpartum depression at six months; and factors associated with postpartum depression at six months included parenting self-efficacy and family life satisfaction.

5.10. Midwife Data Analysis

5.10.1. Rationale of midwife data analysis

Anecdotal evidence suggested that midwives in private practice working as lead maternity carers in New Zealand are experiencing unacceptable levels of work-related stress. They are expected to be on call 24/7 and must provide alternative care when this is not possible. It may be that having clients who are less dependent may ease any work-related stress they experience.

5.10.2. Design of midwife data analysis

Data was collected from midwives of the participants in the randomised controlled trial who gave their permission. Midwives were chosen by participants and consequently their grouping corresponded to the participant's grouping. Data were collected with a brief questionnaire using two visual analogue scales to collect data on midwives' perceptions of their work-related stress. A yes/no question about expected and/or unexpected physical complications was included.

A one-way ANOVA was planned to test the effectiveness of the intervention on midwives' work-related stress. Tukey HSD post hoc test was planned to examine statistically significant findings. An ANCOVA was planned if it becomes necessary to control for physical complications.

5.10.3. Aim of midwife data analysis

The short post birth questionnaire was used to examine perceptions of work-related stress experienced by midwives and whether this varied as a function of the type of childbirth preparation undertaken by their clients (in an uncomplicated spontaneous vaginal birth). It also examined how this compared to the work-related stress they generally experienced in their private practices. The aim was to make this examination of work-related stress for midwives when their clients experienced an uncomplicated labour and birth.

5.10.4. Research questions of midwife data analysis

Firstly, will midwives caring for participants in the Intervention Group experience less work-related stress compared to midwives working with participants in the Active and Passive Control Groups?

Secondly, will midwives caring for participants in the Intervention Group experience less comparative work-related stress (compared to what they generally experience) compared to midwives working with participants in the Active and Passive Control Groups?

There are no known studies which have asked these questions about the impact of skills-based childbirth preparation on midwives in New Zealand's midwifery driven maternity care system.

5.10.5. Hypotheses of midwife data analysis

Firstly, midwives working with participants in the Intervention Group *will* experience less work-related stress compared to the midwives working with participants in the Active and Passive Control Groups who did not use this intervention.

Secondly, midwives working with participants in the Intervention Group will experience less comparative work-related stress compared to the midwives working with participants in the Active and Passive Control Groups.

5.11. This research project - summary

This research project trials a new concept in childbirth preparation. *The Pink Kit Method for Birthing Better®* presents a programme which offers a skills-based approach to preparation for labour and delivery. This trial seeks to primarily determine this type of preparation's impact on childbirth self-efficacy, and secondarily whether there are flow-on-effects on pregnancy anxiety, birth satisfaction, parenting self-efficacy, family life satisfaction, and postpartum depression.

There are a limited number of studies examining childbirth self-efficacy for women living in New Zealand but none that have examined childbirth self-efficacy for fathers. Nor has the impact of skills-based childbirth preparation on childbirth/coaching self-efficacy been investigated. Furthermore, the impact of skills-based childbirth preparation on pregnancy anxiety, birth satisfaction, parenting self-efficacy, family life satisfaction, and postpartum depression has not been examined in New Zealand or elsewhere. Finally, the impact of skills-based preparation used by mothers and fathers has not been researched for its impact on work-related stress for midwives. The present trial aims to contribute to current knowledge by addressing these gaps in understanding.

Data collected in the trial questionnaires allows for other research questions to be explored, thus expanding on the limited knowledge currently available describing the New Zealand experience of childbirth and early parenting. Using qualitative analysis, this research project investigates both mother's and father's experiences of childbirth in New Zealand and what contributes to a sense of birth satisfaction. Lastly, using hierarchical regression analysis this project could explore what factors impacted on the four post birth outcomes.

The following chapter describes the method used to set up and manage this research project.

Chapter 6 – Method – Ethical issues, consents, participants, materials, and procedures

6.1. Chapter overview

This chapter firstly reports ethical issues and consents. Then it outlines aspects of the method relevant to the primary purpose of this research project, the randomised controlled trial, which are also general to the whole project. Finally, this chapter reports aspects of the method relevant to the individual components of the research project where greater detail is required for each.

6.2. Ethical issues and consents

6.2.1. Ethical issues

Ethical issues considered relevant to this research project included fairness, participation, risk, and cultural appropriateness. Fairness was accounted for by using random allocation to treatment. Broad inclusion criteria were applied in an endeavour to gain as many participants from as many different backgrounds as possible. Risk that participants had reached clinically significant diagnoses was considered by sending an advice to people who reached a cut-off score in the EPDS. This advised consulting their GP for further assessment. Anonymity was considered essential in this study, with data being de-identified as it was entered electronically.

Participants were not asked to alter any form of labour and childbirth preparation they had planned. Instead they were asked to continue with whatever they had planned and/or later found appropriate for their needs. Consequently, participants had access to any form of treatment they wished to pursue including the intervention if they located it on the internet (participants were asked in Questionnaire Three if they had used The Pink Kit).

Respect for information given by participants was maintained as this is recognized to be Taonga for Māori participants.

6.2.2. Lower South Regional Ethics Committee

This project was reviewed and was approved by the Lower South Regional Ethics Committee. Ethical approval was amended to cover national recruitment in a letter dated October 4, 2011. Reference Number: LRS/10/11/052 Date: 17/03/2011.
(See Appendix A1).

6.2.3. Māori consultation and recruitment

Research consultation with Māori was undertaken in November, 2010. The Ngai Tahu Research Consultation Committee considered this research project to be of importance to

Māori health (See Appendix A2). Posters and flyers contained photographs of people from varying ethnicities, including Māori, to encourage participants from these groups to consider taking part in the research project. Recruitment material was delivered to and findings were passed on to Māori health organisations.

6.2.4. Registration of trial

This trial has been registered on the website of the Australian New Zealand Clinical Trials Registry (ANZCTR). ACTRN: ACTRN12616001545459.

6.3. Selection and eligibility of participants

The participants were couples (although their data were analysed independently). Each couple was composed of the pregnant mother and the father who were expecting their first baby. Couples were invited to participate if each member of the couple was aged 18 years or over at the time of enrolment. There was an upper age limit for the mother of 42 years. These limits were chosen because younger and older mothers often have specialised healthcare and specific psychological and social needs that were beyond the scope of this research project. There was no upper age limit for the father. The couples were expected to be living together in a relationship with both intending to parent the child. Marriage was not a requirement. Couples needed to have a sufficient command of the English language, both spoken and written, to be able to complete the questionnaires and read/watch any material provided as a part of this research project. Couples were required to enrol before 24 weeks gestation. Recruitment was a major challenge for this research project. Chapter 7 is devoted to these challenges and the development of the strategies which were used to recruit participants.

One hundred and ninety-nine couples were assessed for eligibility. Both parents had to complete the enrolment form, the informed consent, and the demographics form to be considered for eligibility to take part in the study. Sixteen couples in total failed to meet eligibility criteria and one couple failed to give sufficient contact details. These couples failed eligibility for the following reasons: the mother enrolled post 30 week's gestation; the relationship split before the first questionnaire at 24 weeks gestation (required to complete eligibility); the couple failed to respond to the first questionnaire; or miscarriage occurred. Eight couples suffered a miscarriage before the end of the first trimester and before the first questionnaire. Three of these couples subsequently became pregnant within the recruitment period and re-enrolled in the study. They were issued new study numbers as there was concern that the original number may have been negatively associated with the loss they had experienced. One hundred and eighty-two mothers completed Questionnaire One and 174 partners completed Questionnaire One to complete eligibility. (See Appendix B).

6.4. Materials - Recruitment, enrolment, record keeping and other documents

- Recruitment documents included (See Appendices C-I):
 - Posters and flyers
 - Newspaper and magazine advertisements
 - Letters for potential LMCs and practice managers introducing the study and asking for their assistance
 - A permission to contact form (proved ineffective and discontinued)
- Enrolment documents for potential participants included (See Appendices J-O):
 - An information sheet
 - A consent form
 - A demographics form
 - Contact details
 - A list of personal help agencies - the personal help agencies included contact details for a variety of medical institutions and public establishments where mothers were known to visit
 - An acknowledgement letter/email
- Instruction letters for participants for each group after random assignment (See Appendices P-Q)
- Records tables for primary researcher including (See Appendices R1 - R4):
 - Table of participant details
 - Table of participant and midwife details
 - In progress questionnaire record
 - Questionnaire completion details
- Reminder letters (See Appendix S)
- Debriefing sheet (See Appendix T)
- Questionnaires – Accompanying letter plus four questionnaires for each parent (See Appendices U1 – T5). The following lists the outcomes tested in each questionnaire for the trial. Chapter 8 discusses the measurement tools used for each outcome.
 - a. Questionnaire 1: Baseline at 24 weeks gestation
 - Trait anxiety
 - Pregnancy, labour and birth anxiety
 - Depression levels
 - Childbirth self-efficacy
 - Satisfaction with family and life
 - b. Questionnaire 2: Outcome measures at 36 weeks gestation
 - Childbirth self-efficacy

- Pregnancy and birth anxiety
- c. Questionnaire 3: Baseline measure and outcome measure post birth
 - Perceived parenting competence (baseline)
 - Birth satisfaction (outcome)
- d. Questionnaire 4: Outcome measures at 6 months post birth
 - Perceived parenting competence
 - Postpartum depression
 - Satisfaction with family and life
- Thank you gifts for the baby with Questionnaires One and Three (a new-born disposable nappy pack with discount voucher, and a velour feeder with Questionnaire One; a reusable nappy, \$10 and \$5 discount vouchers plus other vouchers to welcome baby)
- Thank you gift draws - All participants who completed the study were entered into four major gift draws. As well, a number of spontaneous draws were held throughout the study as businesses donated goods for this purpose

6.5. Materials - Interventions

6.5.1. Background for a new paradigm in childbirth preparation: *The Pink Kit Method for Birthing Better*®

The concept for *The Pink Kit Method for Birthing Better*® began its evolution in the U.S.A. in the early 1970s, in direct conflict with the then societal expectations for birth. At that time, there were two strongly conflicting opinions on childbirth. One saw childbirth as a natural process, innately safe, something which just happened. The other, the medical viewpoint, saw childbirth as innately risky with the outcome unknown. Both approaches assumed that how the birth progressed could not be predicted and consequently there was no way to prepare for it. Birth was an instinctive and intuitive process. If it went wrong, the medical profession would then take over.

Couples had indicated to Lubell that they were dissatisfied with the limited choices these approaches gave them. As a result, *The Pink Kit Method for Birthing Better*® was developed through trial and error (Lubell, 2008b). Over a 25-year period, Lubell used the observational skills her anthropological training had given her to observe what worked and did not work for hundreds of ordinary families during their pregnancies, labours, and deliveries. The childbirth skills which worked were collected and assembled into a self-taught set of skills to be used to prepare the pregnant body for childbirth. The purpose of these skills was to create as much space and mobility in the mother's birthing body as possible to facilitate the baby's birth. Supporter skills were also incorporated into the programme. The means to produce a

publicly accessible resource became available when Lubell immigrated to New Zealand.

6.5.2. Contents summary and availability of the childbirth preparation kit

The following table gives a brief summary of the contents of the kit used in this research project.

Table 6.1

Brief summary of the contents of the multi-media teach yourself childbirth kit, The Pink Kit Method for Birthing Better®

4 Books and contents			
Breath, language and touch skills	Teamwork and managing skills	Rationalization for basic skills applicable for every birth	Extra skills for specific situations
1 DVD and contents			
Skills to manage birth process, eg: Directed breathing Map your pelvis Teamwork	Skills to keep the body's structure relaxed and open, for example: Deep touch relaxation Cervical relaxation Hip lift Sit bone spread Pelvic clock Kate's cat		
2 CDs and contents			
How to prepare the birth passage, eg: internal work	Skills for each phase of a contraction		

The Pink Kit Method for Birthing Better® is marketed online as a multi-media teach yourself childbirth preparation kit by the Common Knowledge Trust which is based in Nelson, New Zealand.

6.5.3. Birth stories booklet

A series of birth stories reflecting different modes of birth were collected and compiled into a booklet.

6.6. Procedure - Randomised controlled trial

6.6.1. Questionnaire development

Wherever possible, pre-published and validated measurement instruments were used to examine the constructs of interest. The rationale for instrument selection and details of each instrument are reported in Chapter 8.

Prior to use, Questionnaire One was trialled for clarity and time taken to complete, initially with two interested volunteers who gave valuable feedback on structure, wording, and length. Several measurement instruments that were not considered crucial to the RCT were removed because volunteers were unable to complete the questionnaire in under an hour. They reported that the time it took to complete the questionnaire affected their focus and willingness to complete. Consequently, the questionnaire, as first developed, was considered too long as there was concern that some participants would drop out of the study before completing further questionnaires. Survey instruments which were removed were: the Anxiety Control Questionnaire (AQC) (Rapee, Craske, Brown, & Barlow, 1996); Development of the Fear of Pain Questionnaire-III (McNeil, & Rainwater, 1998); Pain Anxiety Symptoms Scale (PASS) (McCracken, Zayfert, & Gross, 1992); Pain Catastrophizing Scale (PCS) (Sullivan, Bishop, & Pivik, 1995); and Penn State Worry Questionnaire (PSWQ) (Meyer, Miller, Metzger, & Borkovec, 1990). The pain surveys were replaced by questions developed for the study. The trait section of the State Trait Anxiety Inventory (STAI) (Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983) and the Pregnancy-related Anxiety Scale (Rinni, Dunkel-Schetter, Wadhwa, & Sandman, 1999) were retained as measures of trait anxiety and pregnancy anxiety. All other survey instruments in the original questionnaire were retained.

The two volunteers agreed that both the structure and the wording were acceptable. Their feedback was incorporated into the final questionnaires (one for mothers and one for fathers). These were then piloted by eight volunteers, three mothers and five unrelated partners. Volunteers came from mixed educational and socio-economic backgrounds and included self-employed, employed by others, and unemployed people. All volunteers found the questionnaires easy to understand and complete in an acceptable time frame.

Minor adjustments in wording in several survey instruments were required so that they reflected New Zealand word usage. Several survey instruments developed for mothers also required minor adjustments so that they became suitable for fathers. These adaptations are discussed in Chapter 8.

6.6.2. Development of the intervention - *The Pink Kit Method for Birthing Better*®

Permission was granted by the Common Knowledge Trustees to remove all identifying material from the birth preparation programme *The Pink Kit Method for Birthing Better*® (See Appendix V). This was done to minimize the chances participants in the Intervention Group would be influenced by external sources. There are wide ranging views expressed about the approach, effectiveness, and presentation of the programme on the internet. Effectiveness scores rated by users range from one to five out of five stars. Those who scored the package poorly complained about its length, repetitiveness, and outdated looks. Some also felt it was

unnecessarily harsh on women who opted for a more medicalised birth. Some of these appreciated the skills shared but felt the whole package needed to be rewritten to make it less complicated and more 'user friendly'. Even some of those who scored it highly and were very impressed with the skills suggested it could do with editing.

To anonymize the package, as a first step, the PDF versions of the booklets were converted into word documents. All identifying words, including *The Pink Kit*, *The Pink Kit Method for Birthing Better*, *Common Knowledge Trust*, *Internal Work*, *New Focus – Breath, Language & Touch*; *Essential Preparations*, in programme titles and subtitles were altered or removed. The terms to be adjusted or removed were derived from Google searches on these terms:

Key among the findings relating to the current search engine user community is that 62% of search engine users click on a search result within the first page of results, and a full 90% of search engine users click on a result within the first three pages of search results.
(http://www.iprospect.com/about/whitepaper_seuserbehavior_apr06.htm;
<http://www.iprospect.com/about/searchenginemarketingwhitepapers.htm>)

Consequently, the primary researcher ensured that the terms that were retained or selected to replace terms used in the programme did not bring up a reference to the title *The Pink Kit Method for Birthing Better*® or any other of its identifying terms before the tenth page of search results.

The following terms were substituted in the place of identifying terms:

- *The programme, this programme, the birthing programme, this birthing programme, the birthing [skills], these [skills]* replaced *The Pink Kit*, and *The Pink Kit Method for Birthing Better* where appropriate.
- *The Essential Preparations Booklet* and *DVD* were renamed *Preparing Your Body – Essential Preparation*.
- *New Focus – Breath, Language and Touch* was renamed *New Focus*.
- The CD *Internal Work* was renamed *Preparatory Internal Work*.
- *Common Knowledge Trust* and *Common Knowledge Charitable Trust* were removed without replacement.

It was important to keep as close to the original names as possible as the booklets and CDs are referred to in the DVD. While it was possible to remove the trademark from the root menu in the DVD without interfering with its function, any further editing would have compromised the integrity of the DVD. For this reason, names of the positions and techniques described in the DVD were not adjusted or altered in any way. The information and its style of expression in each of the four booklets were not altered.

6.6.3. Development of birth stories booklet

Birth stories written by mothers, and some by their partners, describing their unique experiences of labour and birth, were collected from several sources for use in this booklet. Permission was given by the authors to use these stories in this research project. The booklet was titled *Birth experiences: A journey into the unknown*. Names of writers, hospital names, and other identifying material were removed to protect the anonymity of the writers. Stories were organized into chapters by mode of birth so that readers would have no difficulties in identifying the type of birth stories they chose to read (See Appendix W for Table of Contents).

6.6.4. Power study to determine number of participants to ensure statistical power

A power calculation was independently conducted using the free software R Project for Statistical Computing (<https://www.r-project.org/>). For the purposes of the power calculation, Likert scales were treated as continuous scales and use parametric techniques of analysis were assumed. Previous research using CBSEI in randomized controlled trials indicated that most effect sizes were at least moderate (Gau, Chang, Tian, & Lin, 2011; Ip, Tang, & Goggins, 2009).

The one-way analysis of variance power calculation was based on an estimated moderate effect size of 0.5 and 3 groups. Significance level (type 1 error) was set at $\alpha = 0.05$ and power was set at 80%.

It was determined that the study needed a minimum of thirty individuals for EACH of the three groups of mothers and of fathers. A minimum of 90 completers for mothers and 90 completers for fathers was the estimated requirement. Allowing for potentially high numbers of missed questionnaires and dropouts typical of these types of longitudinal health surveys, the target recruitment was set at 180 couples (Capaldi & Patterson, 1987).

6.6.5. Randomization

The computer programme Graphpad was used by a colleague to randomly assign 180 places on an *as they come basis* to one of three groups. Random assignment was done in blocks of 30 to ensure as close to an even a number of assignments to each group as was possible. This precaution was taken as it was not known how many participants would volunteer to take part. (<http://www.graphpad.com/quickcalcs/randomize1.cfm>).

6.6.6. Assignment of grouping

Participants were randomly assigned to groups by a person, who was **not** involved in the study. Randomisation to one of three groups occurred after the completion of Questionnaire One (22 to 24 weeks gestation):

1. The Intervention Group
2. The Active Control Group
3. The Passive Control Group

For practical purposes, **after** participants were randomly assigned to groups, the primary researcher was informed of the randomised grouping so that participants could be given any intervention material that was appropriate. All groups were asked to continue with all activities they had previously planned or later decided were appropriate to their needs.

6.6.7. Sending out questionnaires

The study initially began as a paper study with all documents being posted to participants with self-addressed and stamped return envelopes. When recruitment went national it was considered necessary to gain an online presence with a study website (see Chapter 7). The online enrolment documents were accessed directly from a link on the study website. For those electing to use online questionnaires, links to questionnaires were emailed to participants at the appropriate times (see Figure 6.1).

6.6.8. Record keeping

On enrolment, details of each mother's gestation dates and later the child's birth date were entered into a Google Calendar set up for this purpose. This enabled the primary researcher to ensure questionnaires were sent to participants at the appropriate times. Tables were used as a back up to record when questionnaires had been sent and returned (See Appendices R3 & R4).

The following figure illustrates timing for data collection and group assignment for the randomized controlled trial.

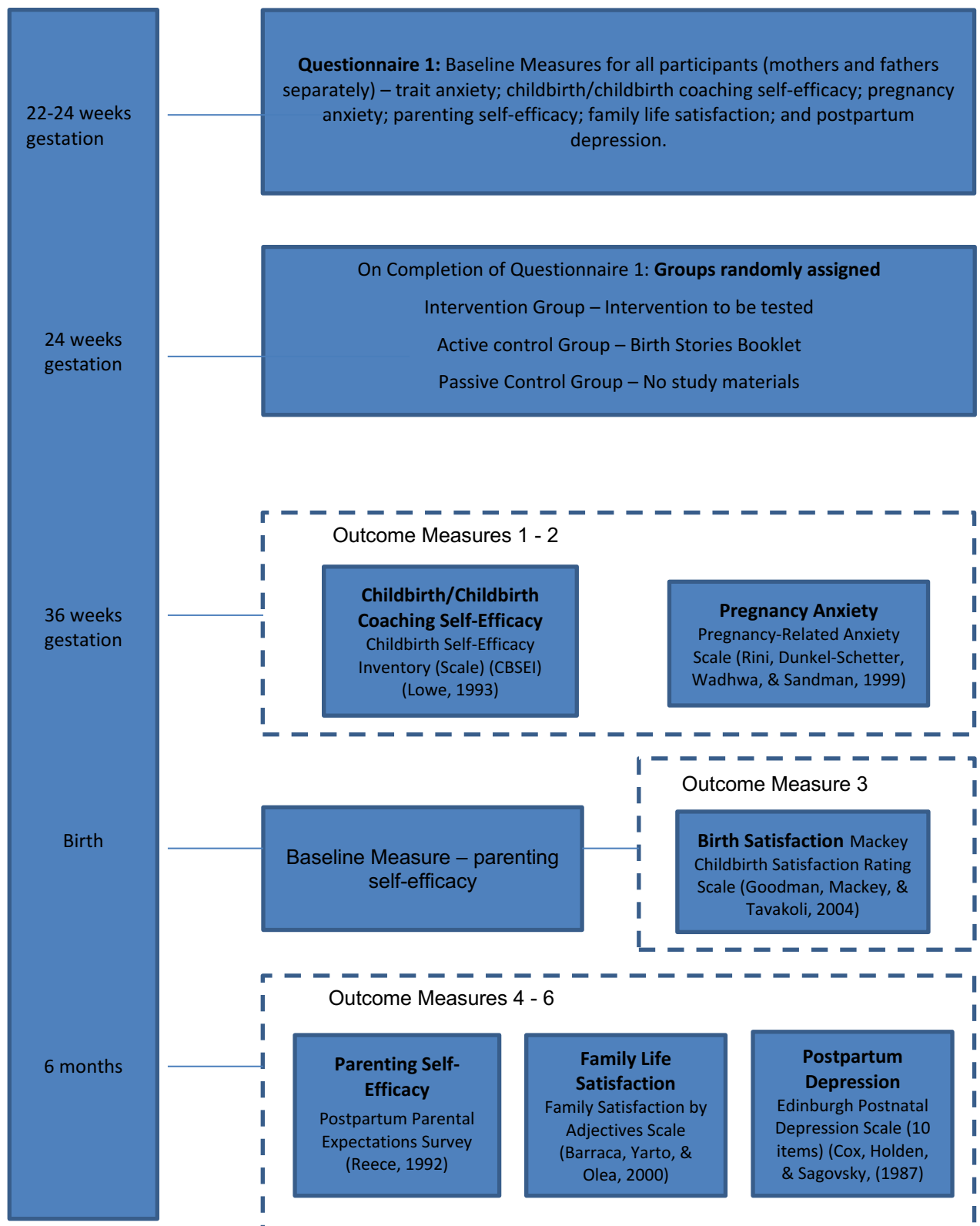


Figure 6.1. Showing timing of data collection and group assignment for the RCT with outcome measures used.

6.6.9. Data analysis methodology

Firstly, data was cleaned and prepared for analysis. Group differences in personal characteristics and baseline (Time One) measures for five outcome variables were investigated using one-way ANOVAs for continuous data. Pearson Chi Square was used to examine categorical data.

A 3 X 2 repeated measures ANOVA with Group (Intervention Group, Active Control Group, and Passive Control Group) as between subjects variable, and Time as within subjects variable, was conducted to test the effect of the intervention on the five other dependent variables measured at two time points - baseline and outcome (Time Two). A paired t-test examined any differences if there was a significant interaction between group and time.

A one-way ANOVA was used to test the effect of the intervention on birth satisfaction. One-way ANOVAs were also used to test the effect of the intervention on the other five outcomes at Time Two. Tukey HSD post hoc test was used to examine any statistically significant findings.

6.7. Procedure - Qualitative data analysis

6.7.1. Selection and recruitment of participants

Participants were recruited for this research based on their personal experience of the event of interest (i.e. the phenomenon), in this case, pregnancy and childbirth. Data was analysed for 162 mothers and 155 fathers who were eligible to take part in the randomised controlled trial.

6.7.2. Data collection

An individual paper or online survey questionnaire (Questionnaire 3) was used to collect written data for this analysis. Specifically, the Mackey Childbirth Satisfaction Rating Scale New Zealand Adaptation [adapted with permission for fathers], a 34-item scale measuring childbirth satisfaction, was used (Goodman, et al., 2004). A further six questions in this questionnaire relate to expectations, whether the experience was positive/negative. This scale gave fathers the opportunity of commenting on all aspects of their experience of the labour and birth of their child. Additional qualitative data the participants included with their questionnaires was also included. The comments of every participant who completed questionnaire three were included in the qualitative analysis even if their questionnaires were not included in the quantitative analysis because they had missed completing one of the four questionnaires.

6.7.3. Data analysis methodology

A form of thematic analysis informed by Interpretative Phenomenological Analysis (IPA) was used to gain a more complete and detailed description of the mothers' experiences of childbirth than the standard quantitative instrument could provide (Reid, Flowers, & Larkin, 2005; Smith, 1995, 1996; Smith, Flowers, & Larkin, 2009; Smith, Jarman, & Osborn, 1999; Trochim, 2006). The word phenomenology refers to the study of individual perception as experienced from the first-person point of view, that is, the individual's own perception of his/her experience independent of any external and objective statement referring to the event of interest. IPA contributes concepts that are of relevance for health studies which have an interest in the individual's experience (Smith, 1995, 1996; Smith et al., 1999). It reflects the assumption that participants are the experts on their individual perspectives of their own life experiences and can provide the detail necessary to explain the phenomenon of interest (Rabiee, 2004).

The structure within which data was collated and coded follows the methodology of Braun and Clarke (2006):

[...] maps onto the inductive approach and is [...] a process of coding the data without trying to fit it into a pre-existing coding frame, or the researcher's analytic preconceptions (Braun & Clarke, 2006, p.84; p. 83)

The analysis to identify themes followed the concept of Interpretative Phenomenological Analysis (Smith, 1995; 1996; Smith et al., 1999; Smith et al., 2009). Such analysis examines:

[...] rich data grounded in individual experience from which theory could be generated (Miller, 2003, p. 145)

6.7.4. Analytic procedure

A phenomenological thematic analysis of comments accompanying the questions asked on the Mackey Childbirth Satisfaction Rating Scale (Goodman et al., 2004), plus other written material provided by participants was used to identify, analyse and report patterns that were extracted from the data. The themes that were identified were tied to the data itself. The analysis was data-driven in the search for patterns of meaning which were embedded in the language the mothers had used to explain their experiences (Braun & Clarke, 2006).

A successful phenomenological analysis involves interpretation and thus needs to be accepted as subjective, reflective, and transparent despite being grounded in the data collected. This interpretation needs to be plausible to others (Braun & Clarke, 2006; Smith et al., 2009). While the primary analyst sought to interpret what the participant's experiences meant for each mother, where appropriate, interpretations were made with an awareness of the primary researcher's own experiences of childbirth. Having similar experiences as the

mothers participating in this project was not a prerequisite, but personal experiences informed the ways in which the other mother's world, although not the father's, was interpreted.

The analyst used a realist approach to identify patterns within the data, using information coded across the data corpus (Braun & Clarke, 2006). To achieve this end, the initial stage involved collation of, and familiarization with, the participant's data. As a first step in the analysis process, each collation was read three times to get a feeling for the data (Smith et al., 2009). Following this, the next step was to place the collation into the centre of a three columned Word document. The left-hand column was used to make notes while the right-hand column was reserved for coding the various themes that would be identified in the data. Notes were made in the left-hand column about interesting data items in preparation for the actual coding. Some initial tentative interpretations were made during this latter stage of the familiarisation process.

The initial coding process was begun once the familiarisation process was complete. As a second step, the collation was gone through again, noting codes in the right-hand column while at the same time exemplary quotes were identified. Different colours were used to give some structure to the data that were selected as potential quotes. At this stage, a list of ideas that reflected the content of the data and what was interesting had been identified. This list contained the initial codes to which the data items were matched. As the process developed new codes were required. These initial analyses were then subjected to further thematic analysis in which codes were further refined.

When the collation was coded as the data designated, a detailed summary of data which supported each code was begun. This began the third step in the analysis process, the development of themes as the process of organizing data into meaningful patterns and groups (Smith et al., 2009). All the codes were entered alongside colour coded key quotes (central column) which supported these codes. Data which supported each code were briefly summarized. Each précis for each code was placed in the left-hand column underneath the code it supported. This process gave a much deeper understanding of the data and preparation for the process of developing the themes from the patterns identified in the initial coding. The focus then shifted to finding common themes within the data.

In the fourth step, connections between the initial themes were identified and the process of organizing these into broader themes was begun (Smith et al., 2009). In another Word document, themes were reordered and duplicate concepts were re-labeled and developed into a hierarchical structure. A mind mapping process gave a visual representation of the information the data provided and how the information fitted together and the relationships that emerged between themes (Smith et al., 1999). Connections between the initial themes were identified and organised into broader themes. It was found that some

initial themes were more realistically sub-themes of larger themes, and thus a pattern of hierarchy became apparent. Core themes were identified along with related subthemes.

The fifth stage in the process involved a revision and refinement of themes. Some themes were found to link closely with others and could be incorporated into each other. This process continued until the themes provided a good overview of the data corpus and the relationships between the themes that were emerging. By the end of this phase themes were clearly identified and named.

The final stage involved the definitive analysis and write up. This involved telling the story the data described with sufficient evidence in the form of quotations taken from the collations to back up the themes and their interpretation. The analysis aimed to:

[...] provide a concise, coherent, logical, non-repetitive and interesting account of the story the data [told] – within and across themes (Braun & Clarke, 2006, p. 93)

6.7.5. Peer review of analysis of data

A second qualitative data analyst read the data and independently organised the data into themes. These were discussed with the primary researcher and an agreement was formed.

6.8. Procedure - Post hoc data analysis

6.8.1. Selection and recruitment of participants

Participants for this analysis were those who had taken part in and had their data analysed for the randomised controlled trial.

6.8.2. Data collection

The data were combined across the three treatment groups, treating the data as a prospective observational study.

6.8.3. Sample size

The formula $\frac{104}{k} + k$ (where k is the number of independent variables [predictors]) was used to determine whether the available sample was large enough to conduct the planned post hoc analysis testing individual predictors (Green, 1991; Tabachnick & Fidell, 2007). With two independent variables in Model 1 and a further 9-14 independent variables added to form Model 2, between 115-120 mothers were needed for these analyses. Data were analysed for 137 mothers. With two independent variables in Model 1 and a further 9-10 independent variables added to form Model 2, between 115-116 fathers were needed for these analyses. Data were analysed for 116 fathers. While small, the sample sizes were adequate for a regression analysis.

6.8.4. Data analysis methodology

The post hoc regression analysis, correcting for the effect of the intervention, explored for factors predicting/associated with for the following: birth satisfaction; parenting self-efficacy at six months; family life satisfaction at six months; and postpartum depression at six months for both parents independently.

On the advice of a biostatistician, the form of hierarchical multiple regression which specifies two blocks of variables, one or more control variable/s entered in the first block, and a set of covariates of interest entered in the second block, was selected. A 2-step model was considered appropriate because *each time a model is presented, there is the risk of a Type I error for each variable* (incorrect rejection of the null hypothesis) *so the fewer steps the better* (Andrew Gray, Biostatistician, personal communication, March 22, 2016). Pairwise deletion was selected to ensure all available data were included in the analyses.

6.8.5. Assumptions for hierarchical regression

Preliminary analyses were conducted to determine whether the assumptions for hierarchical regression were met for the following: normality; homogeneity of variance (homoscedasticity); linearity; outliers; and multicollinearity and singularity.

For both mothers and fathers, scores in the normal probability plots for all models showed minimal deviations from the line of best fit and scores in the scatterplot made a roughly rectangular pattern. Mahal distance scores were acceptable and supported by Cook's distance scores which were below the critical score of 1.0 (Pallant, 2011). There were no correlations between predictor scores over + or - 0.7 for any model, which could indicate predictor variables which were too highly correlated to give a true picture of the relationships of all predictor variables in the model with the dependent variable. The minimum tolerance for all predictor variables was above the critical score = .010. The maximum scores for VIF (variance inflations factor) were well below the critical score = 10 (Pallant, 2011). Assumptions of multicollinearity were met for mothers and fathers. Singularity occurs when both the total score and subscale score are included in an analysis. Singularity was not an issue in either the mothers' or the fathers' data for any variable in these analyses.

These results suggested no potential problems which would preclude this data from hierarchical multiple regression.

6.8.6. Forming the regression models

For the four regression models, Group was entered in stage one of the regression to form Model 1 to control for the impact of the intervention applied in the trial. Other covariates of interest were added to Model 1 to form Model 2. Variables selected to form the models were

chosen based on the findings of other research reported in chapters one to four, and on the information shared by parents and recorded in the qualitative analyses. For both mothers and fathers, with one exception each, none of the demographic variables initially entered into Model 2 made a statistically significant contribution explaining any of the four outcome variables when included with other co-variables of interest and were consequently excluded from the analysis.

Yes/no categorical variables were converted to dummy variables. Because there were 3 groups, Group was converted into two dummy variables, labelled Group variable 1 and Group variable 2. The other variables were measured on either a visual analogue scale or Likert scale and were treated as continuous in the analysis. With the effects of the intervention (Group) factored out, each predictor variable was evaluated in terms of its own predictive power over and above that of the other predictor variables.

6.9. Procedure - Midwife data analysis

6.9.1. Permissions

Ethical approval was granted to approach midwives who had been LMC's for participants as informants. Participants gave their consent for their midwives to be contacted. Consent by midwives was implied by the return of the completed questionnaire.

6.9.2. Participants

Participants were the midwives who had acted as lead maternity carers (LMCs) for participants in the trial. Participants in the trial selected their own midwives. There were 32 midwives who worked with participants in the Intervention Group, 41 midwives who worked with the Active Control Group, and 31 midwives who worked with the Passive Control Group.

6.9.3. Data collection

Questionnaires with a brief introductory letter and stamped self-addressed return envelope were posted out to midwives after their role of LMC for a particular participant was concluded (after six weeks post birth). If there was no response, the questionnaire was posted twice more. Those midwives for whom no postal address was available were texted, referred to the study website, and those who agreed to participate texted their postal addresses.

6.9.4. Measures

Using a Visual Analogue Scale, midwives were asked to rate, firstly, their level of work-related stress, and secondly, their level of comparative work-related stress, when working

with participants in the trial (0-100mm). They were also asked (yes/no) if there were any complications during the labour and birth (see Appendix X).

6.9.5. Analytic procedure - Preparing the data

Data for those participants who had withdrawn and those who did not report the birth of their child were removed. Data for those participants under the care of an LMC other than a midwife and those participants who did not give their permission for their midwives to be contacted were also removed. This left 148 midwives eligible to participate. Of these 104 midwives responded (70% response rate) and had their data analysed.

Data from the two VAS questions were tested for the assumptions of ANOVA. Data for work-related stress levels did not meet the assumptions of normality and homogeneity of variance. It had a positive skew (.639, which was more than twice the standard error of .237). Levene's test for homogeneity of variance was significant ($F(2,101) = 3.459, p = .035$). Data for work-related stress levels were transformed for this factor. The square root variable transformation corrected the skew (.173, standard error .237). Levene's test for homogeneity of variance was not significant ($F(2,101) = 1.043, p = .356$) for the transformed data. The transformed data for work-related stress level now met the assumptions for ANOVA.

The original data for comparative work-related stress levels met the assumptions for ANOVA.

6.9.6. Data analysis methodology

Group differences in work-related and comparative work-related stress for midwives were investigated using one-way ANOVAs. An ANCOVA was used to correct for complications.

The next chapter traces the development and application of the recruitment strategies used in this study.

Chapter 7 – Method – Recruitment

7.1. Chapter overview

This study presented challenges regarding recruitment. When traditional methods of recruitment were slow and the recruitment target was not met, the possibility of using the internet to boost recruitment was explored and successfully used. The following traces the development of the various recruitment strategies used in this study and indicates the effectiveness of each.

7.2. Viability of conducting the study in Dunedin and environs

Statistics New Zealand was consulted to determine the number of live births which could be expected in Dunedin City for the year 2011. Between 2005 and 2009 births totaled between 1222 and 1311 live births per year in Dunedin City (Statistics New Zealand, 2010). These statistics were based on births to mothers who were resident in New Zealand at the time the birth was registered. Late registrations were excluded.

With a fertility rate of 2.12 births per New Zealand woman in 2009, it was concluded that approximately half of the births in Dunedin City (up to 600) had the potential to be first-time births (Statistics New Zealand, 2009). Consequently, the initial recruitment of 180 couples was limited to the greater Dunedin area. However, data released in 2011 recorded the fertility rate for women living in this area as 1.35 births per woman from 2007-2011 (Statistics New Zealand, 2011). This, combined with competition from three other major studies also drawing participants from the same demographic population in Dunedin, contributed towards this study experiencing a very low recruitment rate. By the 22 August, 2011, only 11 eligible couples had enrolled and the decision was made to obtain ethical approval to recruit nationwide. This commenced with a press release outlining the findings of the pilot study *First-time Birth Experiences within the New Zealand Midwifery Driven Maternity System* (Howarth, 2010) and, at the same time, introducing the present study. Eligible participants were invited to take part. Within a week recruitment doubled.

7.3. Traditional methods of recruitment

Prior to the press release, only traditional strategies (defined as non-internet strategies) of recruitment had been used. These included requests for assistance from doctors and midwives (word of mouth or letter), posters, flyers, newspapers and magazines, and snowballing (information shared word of mouth by participants to other potential participants). There were three major phases of recruitment using traditional strategies.

7.3.1. Phase 1 – Enlisting assistance of midwives, GPs and Obstetricians in Dunedin

Letters were written to as many LMCs as could be identified in the greater Dunedin area requesting assistance in giving out information about the study to first-time pregnant couples. This included making posters and flyers available to potential participants as well as giving these potential participants permission to contact forms (a form signed by a potential participant giving the primary researcher permission to make contact) to complete. These came with stamped self-addressed return envelopes. The letters to local GP practices, Arai Te Uru Whare Hauora Ltd., and Family Planning were hand delivered and letters to all other LMCs, including Dunedin obstetricians, were posted. While most practices (GPs and midwifery) displayed posters and left flyers in their waiting rooms, the permission to contact forms were not successful, with only one doctor and one midwife using them. Consequently, this tool was discontinued.

7.3.2. Phase 2 – Enlisting other assistance in Dunedin

Other groups were approached including Dunedin Parent Centre. This group agreed to assist by sending out flyers in their pre-antenatal class packs. These were generally sent too late for enrolment in the present study (only one eligible participant enrolled as a result), but it was hoped to encourage the spread of information by word of mouth. Other groups, including those supporting people in the lower socio-economic groups, were also written to asking if they would assist in disseminating information about the study. It was hoped that their eligible clients would be encouraged to take part in the study. No response was received from any of these groups. Retailers throughout Dunedin and Mosgiel were approached and asked if they would display posters about the study. While retailers in the suburbs and Mosgiel were happy to assist, very few in the city centre displayed posters (window space too valuable for their own advertisements). Posters were displayed in the Dunedin Public Hospital, the Public Library and other public noticeboards throughout the city.

7.3.3. Phase 3 – Nationwide recruitment

Traditional strategies were continued once recruitment went nationwide. After the press release was initially distributed to national newspapers, radio, TV stations, and the University of Otago website on the 16 September, 2011, permission was sought and given to the primary researcher to send it to all regional and local community newspapers. Attempts to recruit participants were also made through letters to the editor (ODT, p. 28, 17 August, 2011; and North and South, p.20-21, October, 2011) and limited purchase of paid advertising published in The New Zealand Herald (9 November, 2011) newspaper and the glossy Auckland giveaway magazine Verve (March, 2012). Posters and professionally printed flyers

(both updated with the details of a newly developed website for the project) were sent nationwide to: midwives and midwifery practices for which postal addresses could be identified; all District Health Boards; and to all public and private libraries throughout the country. Family and friends who travelled around New Zealand took posters and flyers with them to be delivered to GP practices and placed on public noticeboards. Two radio interviews were given (Radio Rhema and More FM) by telephone and a guest appearance on Dunedin City Radio early morning breakfast show was made following the press release.

7.4. Using the internet to recruit (websites, social media)

Increasingly the internet was being used to identify potential assistance. While the press release had been circulated to newspapers and other traditional media, it had also been picked up by internet sites including but not confined to the following:

Healthcanal, Scoop, Medicalxpress, OHbaby, Everybody

A discussion about the two studies also took place on *Twitter*. From the 20 September, 2011 until the 7 October, 2011 there were 34 enquiries from potential participants. Of these, 25 enrolled in the study, resulting in an average of just over 34 enrolments per month for this period. The press release had also promoted the newly designed recruitment tool, the first-time birth website. To provide anonymity and simplify the enrolment process potential participants could enquire through this site and/or enroll directly online. This made enrolment quicker and more efficient, particularly enrolment outside Dunedin. Enrolment continued at a better rate than prior to the press release but at the beginning of May 2012, there were still only a total of 74 enrolments out of the 180 sought. Only 38 enrolments took place between the 8 October, 2011 and the 20 April, 2012, little more than an average of one a week during this period.

Examining feedback from participants (when asked how they first heard about the study) suggested that the posting of the press release on the internet and the decision by the editor of a parenting magazine (OHbaby) to post reference to the study on the magazine's website had been successful in bringing a significant number of participants into the study. Twenty-six out of 59, or 44% of the total of participants, were recruited through the parenting magazine website. Further discussion with members of the targeted population age group supported the conclusion that this demographic relied on internet technology to keep themselves informed. This indicated that exploring internet options for recruitment was a realistic goal. This anecdotal evidence was supported by a study conducted by Gordon et al. (2006) who found that 34.6% of 2523 participants were recruited via internet strategies.

7.5. Google search of websites and public forums — Identifying frequently occurring sites related to the topic

A search of 70 terms relevant to childbirth was conducted in Google. If a search term brought up suggestions for related searches these were also included if considered relevant to the search goal. Although it is likely that new parents searched for information worldwide, sites that were based in New Zealand and would attract New Zealand parents were targeted to find which answered the following question:

What are the online communities which could be useful for recruiting participants by making details of the study known to the targeted population?

Terms were searched with the suffix New Zealand and NZ. The search findings were recorded in a table with the following headings:

Date; search terms; name of website; url of website; use of and link to online community/social media presence e.g. forum, discussion, Facebook, Twitter; and popularity e.g. number of subscribers, followers, friends, likes

While there were many more terms which could have been searched, at this stage it was noted that there were websites that were coming up repeatedly. Using *find*, the website name plus .co or .com or .org, a search was conducted to determine the number of times a website appeared across the search terms.

7.6. Facebook - Identifying groups with an interest in the topic

While conducting the Google search it was noted that many of the websites of interest had a Facebook presence. A systematic Facebook search was conducted using the search terms used for the Google search to answer the following question:

What Facebook sites have communities/forums/discussions which could be useful for recruiting participants by making details of the study known to the targeted population by using these sites?

The searches brought up a variety of results and the names of any useful returns were recorded.

7.7. Using the findings from the Google and Facebook searches

Representatives for the following sites were emailed (5 September, 2012) and asked if the primary researcher could use their forums or post on their Facebook pages:

Huggies; OHbaby; Kidspot; Kiwi Families; Everybody; Bounty; Treasures

Five responded in the affirmative. Two did not respond. One which responded affirmatively also required a fee. This was later waived. Regular postings were made on Huggies, OHbaby, Everybody, Bounty, and Treasures.

7.8. Consultation with media expert

A media expert was consulted to optimize recruitment using online strategies. The website landing page was updated and getting to the enrolment page was simplified using the click of a button from the landing page. Keeping the site active through blogging was also suggested and tried.

It was also suggested that the Facebook page (<https://www.facebook.com/FirstTimeBirths>) set up for the study on 11 October, 2011 be used regularly. Tips were given to optimize the existing Facebook Page and these were actioned. A link to the Facebook Page was set up in the headings of the FirstTime Birth website. From the 8 August, 2012, the primary researcher started posting regularly on the Facebook page. An email campaign asking study participants and friends to *like* the page commenced on 31 August, 2012. Once 50 *likes* were achieved, Facebook made data about the performance of the page available. It was found that regular posts on the Facebook page attracted more attention than blogs on the website. Regular Facebook postings have continued throughout the duration of the study.

7.9. Facebook promotion – Paid ads

Facebook provides a comprehensive and targeted advertising platform to inform the target population of a Page's existence, or motivate them to perform an action. The market ad option was selected and a specific target audience was set up. Daily budget limits were set. Paid Facebook ads commenced on 9 October, 2012 and ran until 16 October, 2012. Other paid Facebook ads ran from 5 to 22 November, 2012; 1 to 15 December, 2012; and 11 to 31 March, 2013.

7.10. Recruitment monitoring graph

The initial recruitment target was 15 participants per month over one year. This proved difficult. It took two years to recruit sufficient numbers of participants to feel confident the analysis would have the required statistical power. The first participant (couple) was recruited on 6 May, 2011 and the last was recruited on 29 April, 2013. The following graph illustrates the actual progression of recruitment throughout the recruitment phase of the study compared to the initial recruitment target.

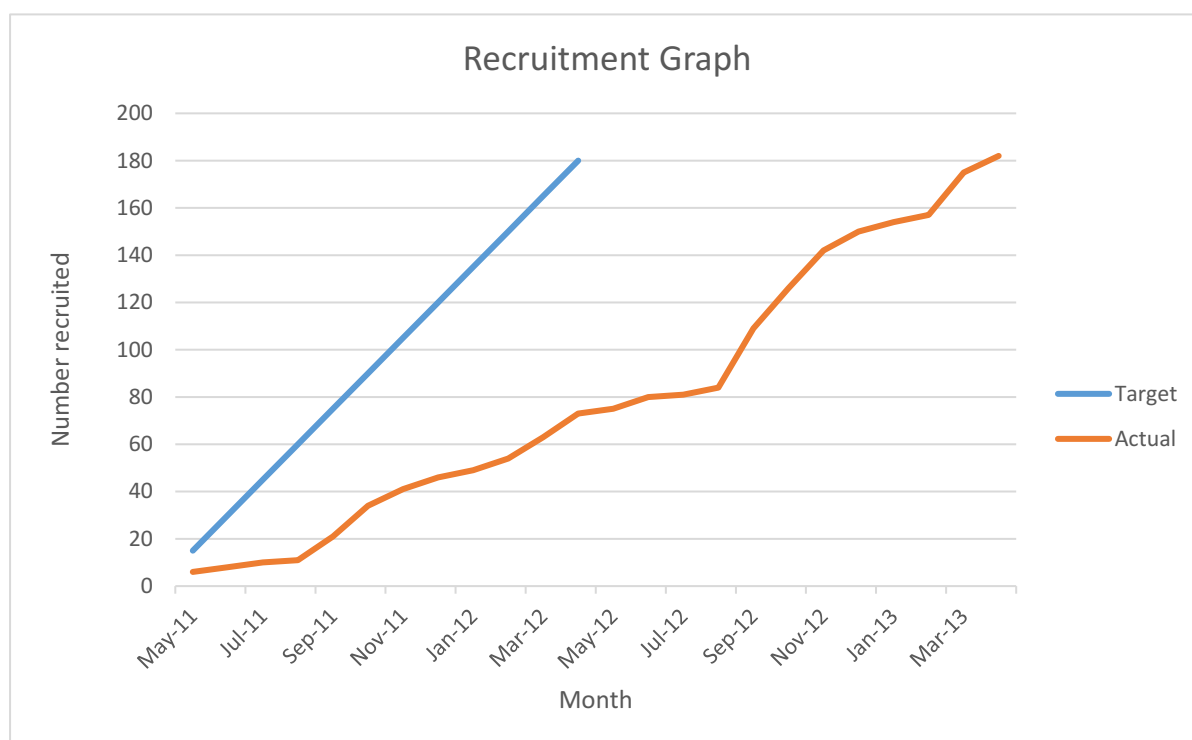


Figure 7.1. Recruitment monitoring graph.

7.11. Comparisons – Traditional methods versus using the internet for recruitment of participants

During the recruitment process, it became apparent that some recruitment strategies were more effective than others. While traditional methods were continued concurrently, from 16 September, 2011, use of the internet as a recruitment tool was expanded. Website details were added to the original posters and flyers.

Participants were emailed and asked how they had *FIRST* heard about the study so the effectiveness of the different recruitment tools for this study could be examined in more detail. There was a 97% response rate. Responses were coded as traditional (posters/flyers, newspaper/magazine, midwife/GP, heard from others – word of mouth) or internet (study website, other websites/forums, Facebook, heard from others – email, sent links). When participants were told about the study by someone else, including links forwarded by email, how that other person heard about the study was not recorded. This was recorded as *heard from others*. However, if they heard about the study from someone else as a Facebook sharing, that was recorded as first hearing about the study from Facebook.

The following graph illustrates the numbers of participants who enrolled in response to the various traditional or internet strategies. While only one participant first heard about the study through finding the study website, all other strategies referred participants to this site for further information and enrolment.

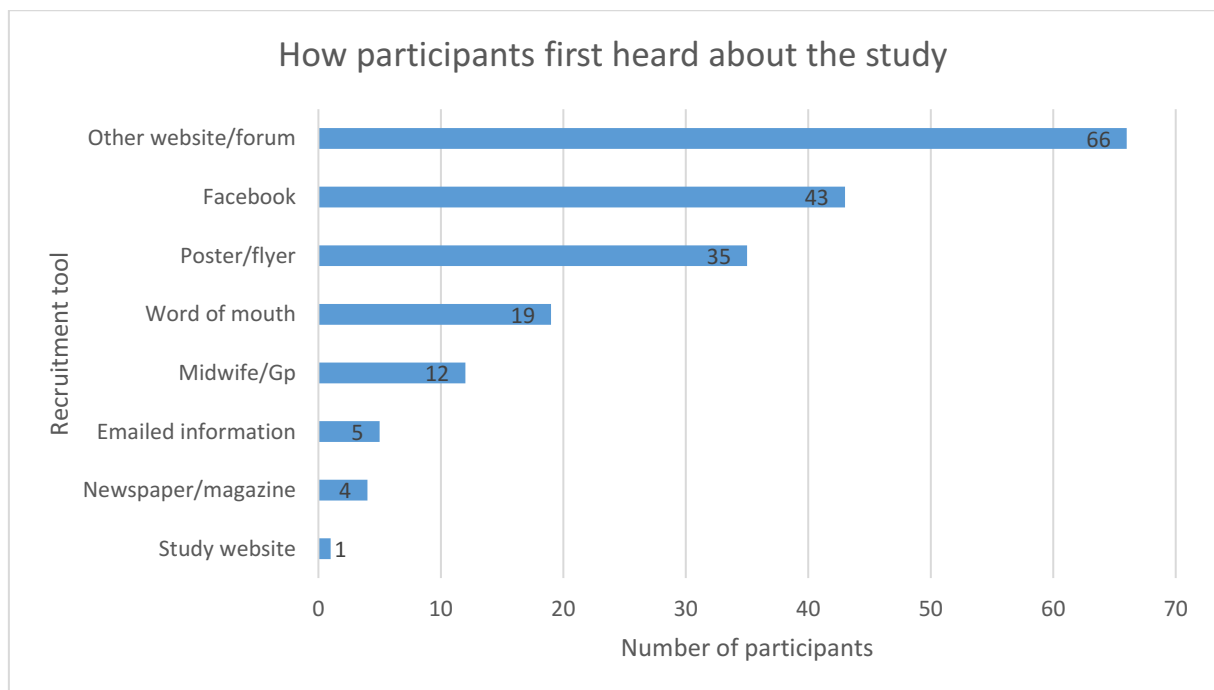


Figure 7.2. Illustration of the effectiveness of recruitment tools used in the first-time birth study.

7.12. Conclusions

Getting support from other websites which shared information related to the study, in this case websites such as those related to health issues and baby and parenting information, proved to be the single most effective recruitment tool for this study. Thirty six percent of participants were recruited through this strategy. Twenty three percent of participants were recruited through Facebook, with a total of 59% of participants being recruited through these two strategies alone. In total, 62% of participants were recruited using some form of internet technology, leaving only 38% of participants being recruited through more traditional strategies.

When the financial and time costs between using traditional methods and internet technology are compared, the internet technology requires considerably less funding and less time input. That, plus the fact that the internet strategies were more successful, suggests that future studies drawing on this demographic may wish to consider using internet strategies for recruitment.

The next chapter discusses the measurement instruments used in this study.

Chapter 8 – Method – Measurement instruments

8.1. Chapter overview

Research studies which used measurement instruments relevant to the present study were examined to determine the appropriateness of these measures for use with the present project. Well validated and reliable measurement instruments were chosen whenever possible. Brevity and clarity of expression were priority criteria for scale selection because this study used repeated testing of a vulnerable population. The measures selected are listed in Table 8.1. When permission to use a particular measurement instrument was expected, this has been requested and granted (see Appendix Y). Permission to make minor changes to adapt instruments to New Zealand conditions where required, and for fathers, was given.

8.2. Measurement instruments for trial

Table 8.1.

Measurement instruments used to measure constructs examined in trial in questionnaires one to four.

Construct	Instrument	Questionnaire/s
Childbirth/coaching self-efficacy	Childbirth Self-Efficacy Inventory (Scale) (CBSEI) (Lowe, 1993)	One & Two
Pregnancy anxiety	Pregnancy-Related Anxiety Scale (Rini, Dunkel-Schetter, Wadhwa, & Sandman, 1999)	One & Two
Birth satisfaction	Mackey Childbirth Satisfaction Rating Scale (Goodman, Mackey, & Tavakoli, 2004)	Three only
Parenting self-efficacy	Postpartum Parental Expectations Survey (Reece, 1992)	Three & Four
Family life satisfaction	Family Satisfaction by Adjectives Scale (F.S.A.S.) (Barraca, Yarto, & Olea, 2000)	One & Four
Depression/postpartum depression	Edinburgh Postnatal Depression Scale (10 items) (Cox, Holden, & Sagovsky, 1987)	One & Four

Mother's and father's questionnaires used the same questions (father's adapted to fit his gender and role where appropriate) and followed the same structures.

8.2.1. State Trait Anxiety Inventory

The trait subscale of the State Trait Anxiety Inventory (Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983) was used to measure trait anxiety. The trait subscale consists of 20 items which assess how an individual usually feels. For the purposes of this study, a qualifier was added to the instructions so that they read *how you generally feel, separate from being/knowning*

your partner is pregnant to encourage participants to assess the levels of anxiety they characteristically experienced.

The twenty items are scored on a four point Likert scale (1 = almost never; 4 = almost always). Scores range from 20 to 80, with higher scores indicating a higher level of trait anxiety.

Cronbach's alphas have been reported for the STAI of $\alpha = .93$ (trait scale) in non-pregnant individuals (Newham, Westwood, Aplin, & Wittkowski, 2012; Spielberger et al., 1983) and $\alpha = .91$ in pregnant women (Tendais, Costa, Conde, & Figueiredo, 2014). The trait subscale when administered both during and after pregnancy gave similar scores thus suggesting it gave a characteristic rating of trait anxiety levels unaffected by anxiety about labour and birth (Rizzardo et al., 1988).

This widely-used self-report instrument is brief and easily administered as well as having good reliability (Julian, 2011). It is quickly and inexpensively scored and suitable for general use in research. However, Julian (2011) added that the trait scale does not have good validity for distinguishing an anxious from a depressed state. Consequently, in the present study other measures of depression and situation specific (pregnancy-related) anxiety were also used.

8.2.2. Childbirth Self-Efficacy Inventory (Scale) (CBSEI), New Zealand Adaptation

The CBSEI (Lowe, 1993) measures childbirth self-efficacy and childbirth expectations. The first two self-efficacy sub-scales (31 items) of the Childbirth Self-Efficacy Inventory (Scale) (CBSEI) (Lowe, 1993), New Zealand Adaptation (also adapted for fathers) which measured childbirth self-efficacy, were used. These included self-efficacy regarding the self-management of stage one¹ (15 items) and stage two² (16 items). Participants were asked to rate their confidence in their ability to manage aspects of labour and birth (thirty-one items). Items were scored on a ten-point Likert scale (1 = not at all; 10 = completely sure). Scores range from 31-310 with a higher score indicating greater childbirth self-efficacy.

The CBSEI labour and birth self-efficacy measurement instrument was developed by Lowe (1993) according to the principals of Bandura's self-efficacy theory and has an established validity and reliability for use with pregnant women (Lowe, personal communication [email], 22-03-2011). Testing of the CBSEI has shown high reliability ($\alpha > .90$) (Lowe 1993, 2000). Sinclair and O'Boyle (1999) conducted a replication study with women from Northern Ireland, who were attending an urban maternity clinic. Their results indicated that

¹ active labour from the time the woman's cervix is three centimetres dilated and she is having regular contractions

² the woman is fully dilated and begins to push the baby out

this scale was both a reliable and valid measure of women's childbirth self-efficacy in other cultures, including midwifery practice situations. Cronbach's alpha scores of $\alpha = .93$ for self-efficacy for active labour, and $\alpha = .94$ for self-efficacy expectancy for second stage of labour were reported. For the study with pregnant women from Iran, Khorsandi et al., (2008) reported reliability of $\alpha = .92$ for self-efficacy for active labour and $\alpha = .91$ for self-efficacy expectancy for second stage of labour.

The psychometric properties of the subscales have been confirmed in many studies of pregnant women (e.g. Berentson-Shaw et al., 2009; Beebe et al., 2007; Soet, Brack, & Dilorio, 2003; Yi-Chin Sun, Ya-Chi Hung, Yuanmay Chang, & Su-Chen Kuo, 2010). Agreement with results obtained by similar measurement instruments confirmed the criterion-related validity of the childbirth self-efficacy sub-scales (Drummond & Rickwood, 1997).

The CBSEI was an instrument developed for use with American pregnant women, but a careful examination of the first 31 items indicated that very minor adjustments to wording would make it an acceptable instrument for assessing the father's management of his coaching of the mother through these stages of labour. As no other acceptable instrument was located in a search of the literature, permission to adjust the wording in the CBSEI to make it suitable for fathers was requested from Lowe and granted. For example, changes include changing the word *myself* to *herself* and *my* to *her*; *relax my body* became *relax her body*; and instructions were altered from *Think about how you imagine labor will be and feel when you are having contractions 5 minutes apart or less. For each behavior, indicate how certain you are of your ability to use the behavior to help you cope with this part of labor...* to *Think about how you imagine labour will be and feel for your partner when she is having contractions 5 minutes apart or less. Please indicate how sure you are of your ability to assist your partner to use each behaviour to help her cope with this part of labour...*

8.2.3. Pregnancy-Related Anxiety Scale

The Pregnancy-Related Anxiety Scale (also adapted for fathers), developed by Wadhwa et al. (1993) and later revised by Rini et al. (1999) is a validated measure of anxiety related to pregnancy. This ten-item scale gives information on the anxiety directly related to a mother's concerns about pregnancy and impending childbirth as well as the well-being of the developing child. There are ten items scored on a four point Likert scale (1 = never; 4 = a lot of the time). Scores range from 10 to 40, with higher scores indicating a higher level of pregnancy related anxiety.

Cronbachs alphas ranged from $\alpha = .75$ to $\alpha = .85$ in a sample of children (Buss, Davis, Hobel, & Sandman, 2011), $\alpha = .78$ in a sample of English speaking women (Rini et al., 1999), and $\alpha = .81$ in a group of 415 pregnant American women (Glynn et al., 2008).

Minor adjustments to wording adapted the scale for fathers. For example, the question *I am confident of having a normal childbirth* became *I am confident of my partner having a normal childbirth*.

8.2.4. Mackey Childbirth Satisfaction Rating Scale, New Zealand Adaptation

Birth satisfaction was measured using the Mackey Childbirth Satisfaction Rating Scale (Goodman et al., 2004) New Zealand Adaptation (also adapted for fathers). This scale takes into consideration the multidimensional nature of the childbirth experience. The 34-item scale contains questions related to the behaviours of self, partner, baby, nurse (midwife) and physicians. A further six questions relate to expectations, whether the experience was positive/negative, and give the opportunity of commenting on the positive and negative aspects of the labour and birth experience. Items one to 34 are scored on a five-point Likert scale (1= very dissatisfied; 5 = very satisfied). Scores from the first 34 items range from 34 to 170. Two items measuring expectations are scored on a four-point Likert scale (1 = Not at all like I expected it to be; 4 = Just like I expected it to be). A further two items measuring positivity are scored on a four-point Likert scale (1 = It was very negative; 4 = It was very positive). For these four items scores range from 4 to 16. Consequently, scores for the quantitative measures in this survey range from 38 to 186. The higher the score, the greater the birth satisfaction.

Differing systems (American/New Zealand) created issues. For example, many women giving birth in New Zealand do not require the services of a physician/obstetrician. The potential for differing experiences, for example, some women have surgery without labour, also created issues. There are also more options for home birth in New Zealand. Consequently, it was anticipated that some of the questions for some of the participants would not be relevant. As a result, it became necessary to add a sixth scoring column entitled N/A. This in turn created anomalies with scoring for total birth satisfaction which also required adjustment. Scoring for birth satisfaction was adjusted for N/A responses using the following formula:

$$\text{Birth satisfaction score} = \text{TS} * (\text{TQ} / (\text{TQ} - \text{NA}))$$

Where, TS = total score; TQ = total number of questions; NA = number of questions for which N/A was the response. The added N/A option was scored as zero so as not to alter the final satisfaction score.

This scale also provides the option for making comments on each of the questions asked. This is discussed in section 8.4.

Overall reliability was excellent ($\alpha = 0.93$) (Goodman et al., 2004). Mas-Pons et al. (2012), with a subsample of 45 women (out of 325) who had uncomplicated vaginal births,

examined the reliability of the Mackay Childbirth Satisfaction Rating Scale version adapted for use with Spanish women. Cronbach's alpha ranged from $\alpha = 0.72$ to $\alpha = 0.96$ for the subscales with a Cronbach's alpha score of $\alpha = 0.94$ for the total scale. They concluded that the Mackay Childbirth Satisfaction Rating Scale was a reliable instrument for measuring childbirth satisfaction with Spanish women. Christiaens and Bracke (2007) used this scale to test birth satisfaction with Belgian and Dutch women recruited during the antenatal period. This sample included both low risk women who had uneventful births (as in the Goodman et al., 2004, study) and women who had more complicated births requiring instrumental deliveries. Christiaens' and Bracke's (2007) analysis of the scale using responses from 605 women gave a Cronbach's alpha of $\alpha = 0.93$ for the total scale. It was also reliably used in a study by Grassley and Sauls (2011) of adolescent mothers' birth satisfaction and likelihood of breastfeeding.

Because the Mackey Childbirth Satisfaction Rating Scale (Goodman et al., 2004) was developed for women giving birth in the American maternity system, consideration was given to differing terminology, for example, the term *nurse* was altered to *midwife*. Adaptations to the questionnaires for fathers required wording changes which recognised his role as birth coach. For example, *Your overall labour experience* became *Your overall experience of your partner's labour* for the father's questionnaire. Permission was requested and given by Mackey to use this scale and make these adaptations.

8.2.5. Postpartum Parental Expectations Survey [Revised version of the Parent Expectation Survey]

Parenting self-efficacy was measured using the updated version of the Parent Expectations Survey (Reece, 1992). The original 20 item Parental Expectations Survey measured perceived parenting self-efficacy and was initially developed by Reece (1992) based on Albert Bandura's (1982, 1986) study of the mechanisms and consequences of a strong or weak sense of self-efficacy, or self-appraisal of one's ability to perform effectively. Reece and Harkless (1998) stated that:

In the activities associated with parenting an infant, greater perceived self-efficacy may positively affect satisfaction and may decrease the amount of stress associated with the challenges of that role. (p. 199)

Permission was requested from Reece to use this measurement instrument. She forwarded the updated version of the Parent Expectations Survey, the copy now titled Postpartum Parental Expectations Survey (Reece & Harkless, 1998) (personal communication, 23 April, 2008). This version features a 25-item scale which assesses parents' beliefs about their parenting capabilities, the five extra items including items such as: *I can sense my baby's moods*

and *I can show my love for my baby*. Parents rate their perceived abilities to parent their child on an eleven-point Likert scale (0 = I cannot do; 10 = Certain I can do). Scores range from 0 to 250. Higher scores indicate greater parenting self-efficacy.

The 1992 Reece study demonstrated the validity of the measurement instrument (Reece & Harkless, 1998). Reece and Harkless (1998) used the updated version, which included the extra five items, on a study involving couples in the last trimester of their pregnancy. The reliability coefficient of the Reece and Harkless (1998) study in the antepartum period was $\alpha = .92$ and in the postpartum period was $\alpha = 0.97$. De Montigny, Lacharite, and Amyot (2006) also used the updated version in a study of French speaking Canadian first-time mothers and fathers. They reported Cronbach's alpha scores of $\alpha = 0.91$ for mothers and $\alpha = 0.91$ for fathers. In a later study, de Montigny and Lacharite (2008) also corroborated the reliability of the instrument for measuring parenting confidence when the survey was given to parents of children less than one year old with a Cronbach's alpha score of $\alpha = 0.88$ for mothers and $\alpha = 0.90$ for fathers. Sierau, Lehmann, and Jungmann (2011), in a study of 83 disadvantaged families in which the importance of paternal parenting self-efficacy and partner satisfaction was examined six months after the birth to determine its impact on the infant's development, reported Cronbach's alpha of $\alpha = 0.90$.

8.2.6. Family Satisfaction by Adjectives Scale (F.S.A.S.)

A variety of limitations seen by Barraca et al., (2000) in available scales resulted in the development of this measure of family satisfaction. They felt that previous scales did not adequately define the construct of family satisfaction, resulting in debatable construct validity. Barraca et al. (2000) were also concerned by the lack of affective components in previous scales. The Family Satisfaction by Adjectives Scale (F.S.A.S.) (Barraca et al., 2000) addresses these issues by defining a universal and comprehensive aggregate of family interactions by the use of appropriate adjectives. The use of bipolar adjectives makes a quick response possible. Consequently, this scale was used to measure family life satisfaction.

The Family Satisfaction by Adjectives Scale (F.S.A.S.) is *a scale of bipolar adjectives* (Barraca et al., 2000, p. 98) comprising 27 items. Participants can choose between six alternatives for each pair of affective adjectives (*totally, quite, or to some extent* for each adjective) to complete the statement: *When I am at home, with my family, I mostly feel . . .*

For example:

Happy ○ ○ ○ ○ ○ ○ Unhappy

For the present study, this scale was scored 1 = positive; 6 = negative. The scores range from 27 to 162. **A higher score indicated less satisfaction.**

This scale was subjected to careful statistical analysis to determine its appropriateness for the task of measuring family life satisfaction. Tests of 274 participants gave an average Cronbach's $\alpha = 0.976$ for the final scale of 27 items (for men $\alpha = 0.974$ and for women $\alpha = 0.977$) (Barraca et al., 2000). Tests, using the scale comparing a general sample matched by age, educational level and type of family situation, to a sample of individuals undergoing family therapy, indicated that it had the capacity to distinguish between the two groups (Barraca et al., 2000). The reliability analysis by Bakalim and Karckay (2015) of the Turkish adaptation of this scale gave a Cronbach's alpha score of $\alpha = 0.95$, thus demonstrating its appropriateness for use with different cultures. In a later study, using a Turkish sample of 441 girls, boys, women and men (ages 15 to 62 years), Tasdelen-Karckay (2016) reported a Cronbach's alpha of $\alpha = 0.98$. In their discussion of measures of family life satisfaction, Zabriskie and Ward (2013) reported that this scale is a sound instrument for measuring *the affective component of family life satisfaction* (page 448).

8.2.7. Edinburgh Postnatal Depression Scale (10 items) (EPDS)

Childbirth related depression was measured with the Edinburgh Postnatal Depression Scale (10 items) (Cox et al., 1987). It is a self-rating instrument that identifies persistent low mood, guilt, anxiety and thoughts of self-harm. The EPDS (Cox et al., 1987) is composed of 10 items. The items are scored on a four point Likert scale (0 = positive; 3 = negative). Scores range from 0 to 30 with a higher score indicating a more negative outcome. Higher scores may be indicative of, but NOT a diagnosis of, depressive illness. The scale will not detect anxiety neuroses, phobias or personality disorders (Cox et al., 1987). Possible depression is suggested with a score of 10 or greater (Cox et al., 1987). Mothers who score above 13 may be potentially suffering from a depressive illness of varying severity (Fairlie, Gillman, & Rich-Edwards, 2009). Edmondson et al. (2010) concluded that a cut-off point of 10 was optimal in indicating the possibility of depressive illness for fathers.

Cox, et al., (1987) found that this scale:

[...] had satisfactory validity, split-half reliability and was also sensitive to changes in the severity of depression over time (p. 784).

They concluded that the 10 item Edinburgh Postnatal Depression Scale (Cox et al., 1987) was a useful instrument for detecting mothers who may be suffering from postpartum depression.

In a study assessing the validity of the 12-item general Health Questionnaire (GHQ-12) and the EPDS, Navarro et al. (2007) found both scales valid instruments for determining who may have been suffering symptoms of depression (sensitivity) and those who were unlikely to be suffering symptoms of depression (specificity) with the EPDS (sensitivity 0.855;

specificity 0.853) being slightly superior for detecting potential postpartum depression. A further study validating the EPDS by Cox, Chapman, Murray, and Jones (1996) administered the test as a postal questionnaire to non-postnatal women and to postnatal women (baby six months). The results verified good user acceptability and satisfactory sensitivity (0.79) and specificity (0.85). This study confirmed the usefulness of EPDS as a instrument for screening scales for potential depression in community samples. Leahy-Warren et al., (2011) reported a Cronbach's alpha of $\alpha = 0.88$ in their study of the relationships between postpartum depression, maternal parenting self-efficacy, and social support in a group of Irish first-time mothers. Huizink et al (2004) assessed 230 women in early pregnancy using the EPDS twice, at mid and late pregnancy. They reported Cronbach's alphas of $\alpha = 0.86$ and $\alpha = 0.87$ respectively. Matthey et al. (2001) used the EPDS with men to measure depression related to childbirth. A Cronbach's alpha of $\alpha = 0.81$ for men allowed them to conclude that the EPDS, while not a clinical diagnostic instrument, was a reliable indicator of postpartum depression in men.

8.3. Additional measures

The following section discuss the measurement instruments used to identify predictive factors (other than the multi-items instruments listed in Table 8.1.).

Table 8.2.

Additional measures used to measure demographics and other factors in demographics form and questionnaires one to three³.

Questionnaire	Factor	Measured by
Demographics	Marital Status	Yes/no
	Age	Age in years
	Home ownership	Yes/no
	Education	Best fit response
	Qualifications	Yes/no
	Qualifications	Best fit response
	Employment Status	Best fit response
	Personal income	Best fit response
	Household income	Best fit response
	Immigration	Yes/no
	Ethnicity	Best fit response
Questionnaire One	Trait anxiety	State Trait Anxiety Inventory (Spielberger et al., 1983)
	Expectations about labour pain, pain distress, labour length	Visual Analogue Scale (VAS)
	Expect will want epidural	Visual Analogue Scale (VAS)

³ Questionnaire 4 contains only multi-item measures used in the trial.

	Expect will use non-medicated pain management	Visual Analogue Scale (VAS)
	Expectation of medical intervention including induction, instrumental delivery, or caesarean section	Visual Analogue Scale (VAS)
	Expect natural birth	Visual Analogue Scale (VAS)
Questionnaire Two	Expectations about labour pain, pain distress, labour length	Visual Analogue Scale (VAS)
	Childbirth distress expectation	Visual Analogue Scale (VAS)
	Expect will want epidural	Visual Analogue Scale (VAS)
	Expect will use non-medicated pain management	Visual Analogue Scale (VAS)
	Expecting non-medicated strategies to be helpful	Visual Analogue Scale (VAS)
	Expectation of medical intervention including induction, instrumental delivery, caesarean section	Visual Analogue Scale (VAS)
	Expect natural birth	Visual Analogue Scale (VAS)
Questionnaire Three	Labour pain experienced	Visual Analogue Scale (VAS)
	Difficulty witnessing labour pain experienced	Visual Analogue Scale (VAS)
	Non-medicated pain management useful	Visual Analogue Scale (VAS)
	Use of touch by others	Yes/no
	Epidural experienced	Listed by participant, coded by primary researcher
	Medical interventions experienced during labour or birth	Yes/No
	Induction, Caesarean experienced	Listed by participant, coded by primary researcher
	Other intervention experienced (post-birth)	Listed by participant, coded by primary researcher
	Labour expectations met	Yes/No
	Birth expectations met	Yes/No
	Antenatal classes useful?	Yes/no
	Parenting class attended	Listed by participant, coded by primary researcher

8.3.1. Visual Analogue Scales (VAS) (continuous scale 0 to 100)

Care was taken to ensure questionnaires did not become too large. Consequently, several multi-item surveys examined for use were not used. Because they allowed a quick response, it was considered that a VAS assessment generally provided the most appropriate

measurement instrument for factors that could be rated on a continuum 0-100 (in millimetres). Consequently, for appropriate questions, a Visual Analogue Scale was used.

Visual Analogues Scales have been found to be very suitable for answering specific questions. Using a horizontal line 100 mm long to measure global quality of life, de Boer et al. (2004) compared results with two other reliable and valid measurement instruments, the MOS (Medical Outcome Studies) SF-20 (a reliable measure of quality of life) (Wu, Revicki, Jacobson, & Malitz, 1997) and the Rotterdam Symptom Check-List (RSCL) (a measure of disease-specific quality of life) (De Haes, Van Knippenberg, & Neijt, 1990). De Boer et al. (2004) reported that the VAS demonstrated its reliability with moderate to high correlations with the multi-item questionnaires. Kim and Buschmann (2006) found an adaptation of a VAS for measuring pain in older adults was an appropriate measure of pain intensity in this population and this study also provided cross-cultural evidence of its efficacy measuring pain intensity the population of older adults. Tamiya et al. (2002) reported a high correlation in a same day test-retest ($r = 0.84$, 95% CI = 0.78–0.88) confirming the reliability of VAS for testing pain in patients with rheumatoid arthritis. Herr, Spratt, Mobily and Richardson (2004) examined the psychometric properties of five pain rating scales (VAS, Numeric Rating Scale (NRS), Verbal Descriptor Scale (VDS), Verbal Numeric Rating Scale (VNS), and Faces Pain Scale (FPS) used to measure experimentally induced thermal pain intensity in a group of younger and a group of older volunteers. Cronbach's alpha for the VAS was $\alpha = 0.87$, as reliable as the other four measurement instruments. VAS are now considered an appropriate and standard measure in the study of pain. For the purposes of the present project, it was concluded that VAS linked to single question was a valid measure of health-related issues.

8.3.2. Categorical measures

Questionnaires also included other questions developed for the study which were not continuous categorical variables. These included demographic factors, expectations, other preparation strategies, and clinical events of labour and delivery. VAS was not an appropriate measure for non-continuous categorical variables. These were best answered with either yes/no or by selecting the response which offered the best fit.

8.4. Qualitative data collection

Qualitative data is collected when participants freely respond. This can be in written or verbal form. Each questionnaire ended with a space for any additional comments to be made.

Questionnaire Three also gave participants the opportunity to make detailed comments about their childbirth experiences. Use of comments in the Mackey Childbirth

Satisfaction Rating Scale (Goodman, Mackey, & Tavakoli, 2004) opened the closed-ended questions to allow participants to freely express their perceptions of their experiences in written form. The data that was shared was not superficial. Responding participants had thought deeply about what they wanted to say to provide a very rich data set worthy of analysis.

Consideration was given to the possibility of conducting individual interviews. However, the primary researcher had to find a balance between how much she would have liked to ask of participants, and what was reasonable to ask of their time commitment to this project. This was complicated by the fact that this was a longitudinal study with four questionnaires over a period of approximately ten months (time frame dependent on whether baby was early or late). The third questionnaire was not only the longest, but came at a time when parents were in the very early stages of adjusting to having a newborn in their lives. Consequently, a decision was made not to conduct individual interviews. There was concern that this would add extra pressure to already pressured parents with the possible consequence they would withdraw from the study.

8.5. The midwives' questionnaire

This short survey was developed for this study and consisted of three questions with room for comments if required. No standardised questionnaires were available to measure this construct. The two questions pertaining to work-related stress were measured on a **VAS** on a continuum 0-10 (in centimetres). Measurement was taken to the nearest millimetre. The **categorical variable** reporting if complications occurred required the selection of yes or no (see Appendix X).

The next chapter outlines the issues inherent in the data and the processes undertaken to prepare the data for analysis.

Chapter 9 – Results - Cleaning and preparing data for the RCT analysis

9.1. Chapter overview

Prior to running analyses for the randomised controlled trial, missing values and outliers were dealt with and assumptions of normality tested for each variable using the Statistical Package for the Social Science (SPSS).

9.2. Cleaning and preparing the data for analysis

Advice was sought from a biostatistician. (see Appendix Z for tables not included in this chapter)

9.2.1. Withdrawals after eligibility and drop outs

Completion of Questionnaire 1 was the final step in eligibility to participate in the trial. Withdrawals after this were limited, leaving 174 eligible mothers and 167 eligible fathers. There were, however, a greater number of withdrawals for the mothers and fathers in the Intervention Group ($n = 7$ and $n = 7$ respectively). While the Intervention Group experienced more occurrences which caused them to withdraw before questionnaire 2, this did not reach statistical significance ($p > .05$).

While participants could withdraw at any time without explanations, participants who withdrew did give explanations. These included relationship splits, extended family tragedies, and ill health. Based on the information provided by the participants who withdrew, it was concluded that withdrawals were missing completely at random.

Drop outs from groups after Questionnaire Two did not reach statistical significance ($p > .05$).

9.2.2. Missing values (whole questionnaires missing) and outlier

Unforeseen and unavoidable circumstances meant that for each measurement time period, there were questionnaires which were missed by eligible participants.

Table 9.1.

Percentage of missing values (complete questionnaires) for each outcome assessment period.

Missing values (entire questionnaires) post eligibility				
	Questionnaire 2	Questionnaire 3	Questionnaire 4	
Mothers				
176 eligible after withdrawal post questionnaire 1	11%	7%	10%	
Fathers				
167 eligible after withdrawal post questionnaire 1	17%	7%	13%	

Participants who missed one questionnaire were welcome to complete later questionnaires. This accounted for the differences in the percentages of questionnaires missing for each questionnaire.

Babies coming before 37 weeks gestation accounted for most of the missing second questionnaires, with the participants in the Intervention Group experiencing more early babies than the other two groups, although this did not reach statistical significance ($p > .05$). Other reasons for missing questionnaires included relationship break ups and questionnaires not arriving (for example, going into email spam boxes and not being found in time to complete). It was concluded that missing questionnaires, like the withdrawals after eligibility, were *missing at random*.

The total of one father's responses to the birth satisfaction survey was three plus standard deviations from the mean. This affected the results of the birth satisfaction data analysis. Consequently, this outlier score was removed and not analysed with the other fathers' birth satisfaction data.

9.2.3. Intention to treat analysis versus per protocol analysis

There was concern that the missing questionnaires would bias results in an intention to treat analysis, that is if all the participants were left in the analysis. If there are missing responses within a survey, it is often possible to impute missing values, but missing questionnaires cannot be imputed. One-way ANOVAs, including all the participants who missed some questionnaires, were conducted and additional one-way ANOVAs with data in which participants with missing data were excluded was conducted. Results were similar and no bias was determined. The decision was made to exclude those who missed any questionnaires and conduct a per protocol analysis.

9.2.4. Per protocol analysis

Additionally, a further two participants from each control group ($N = 4$) were removed from the analysis because they found and used the intervention independently. This left the following numbers of participants to be included in the analysis:

	Mothers	Fathers
Intervention Group	• 38	• 31
Active Control Group	• 48	• 40
Passive Control Group	• 51	• 45

9.3. Shapiro-Wilk test for normality

9.3.1. Shapiro-Wilk test – Dependent variables at baseline (Time One)

All five dependent variables at baseline, plus trait anxiety, were tested to determine if the distributions significantly departed from normality.

Four of the six dependent variables at baseline for the mothers' data failed the Shapiro-Wilk test ($p < .05$). However, all the dependent variables at baseline, except for mothers' depression, had skew scores within the normal range (-1 to +1). Mothers' depression had a slight positive skew (skew = 1.001).

Table 9.2.

Shapiro-Wilk tests for normality of data for baseline measures.

Shapiro-Wilk test for normality – baseline measures		
	Mother	Father
Dependent variable	Significance	Significance
Trait anxiety	$p < .01$	$p = .01$
Childbirth/coaching self-efficacy	$p > .05$	$p = .03$
Pregnancy anxiety	$p > .05$	$p > .05$
Parenting self-efficacy	$p = .01$	$p < .01$
Family life satisfaction	$p < .01$	$p < .01$
Depression ¹	$p < .01$	$p < .01$

Five of the six dependent variables at baseline in the fathers' data failed the Shapiro-Wilk test ($p < .05$). However, the dependent variables at baseline, except for fathers' depression and fathers' parenting self-efficacy, had skew scores within the normal range (-1 to +1). Fathers' depression had a small positive skew (skew = 1.319) while fathers' parenting self-efficacy had a small negative skew (skew = -1.264).

The data for each dependent variable at baseline which did not pass the Shapiro-Wilk test were transformed using either log10 or square root methodology, dependent on which transformation put the data within a normal range for distributions. All transformed variables at baseline subsequently fell within the normal range for distributions, except for mothers' depression ($p = .006$) and fathers' depression ($p < .001$).

The non-parametric test, the Kruskal-Wallis test, was used to analyse the depression data (which did not fall within a normal range despite transformation) to determine whether the failure to meet the normality assumption would affect results if the data were analysed using one-way ANOVA. The original (not transformed) and the transformed data were analysed using one-way ANOVA to make a comparison. It was concluded that results would not be significantly affected.

¹ In this and all following tables in the thesis depression and postpartum depression refer to the EPDS score which gives an indication of level of depression but not a diagnosis of postpartum depression

9.3.2. Shapiro-Wilk test - Dependent variables at outcome (Time Two)

All dependent variables at outcome in the mothers' data failed the Shapiro-Wilk test ($p < .05$): However, all had skew scores and Q.Q plots which suggested normality with the exception of mothers' birth satisfaction which had a slight negative skew (skew = -1.078).

Table 9.3.

Shapiro-Wilk tests for normality of data for outcome measures.

Shapiro-Wilk test for normality – outcome measures		
	Mother	Father
Dependent variable - outcome	Significance	Significance
Childbirth/coaching self-efficacy	$p = .02$	$p < .01$
Pregnancy anxiety	$p = .01$	$p > .05$
Birth satisfaction	$p < .01$	$P < .01$
Parenting self-efficacy	$p < .01$	$p < .01$
Family life satisfaction	$p < .01$	$p < .01$
Postpartum depression	$p = .01$	$P < .01$

In the fathers' data, pregnancy anxiety was the only dependent variable at outcome to pass the Shapiro-Wilk test. Parenting self-efficacy and family life satisfaction, while failing the Shapiro-Wilk test, had skew scores and Q.Q plots which suggested normality. Childbirth coaching self-efficacy had a slight negative skew (skew = -1.033), as did birth satisfaction (skew = -1.086) and postpartum depression had a small positive skew (skew = 1.299).

Data for each dependent variable at outcome which did not pass the Shapiro-Wilk test were transformed using either log10 or square root methodology. All transformed dependent variables at outcome subsequently fell within the normal range for distributions with the exception of mothers' postpartum depression ($p < .001$) and childbirth self-efficacy ($p = .046$) and fathers' postpartum depression ($p < .001$). It was noted that mothers' postpartum depression and childbirth self-efficacy at outcome (original and transformed data) contain multiple modes. Fathers' postpartum depression at outcome (original and transformed data) data have distinct differences between the mean and median compared to the mode.

The non-parametric test, the Kruskal-Wallis test, was used analyse mothers' and fathers' postpartum depression data and mothers' childbirth self-efficacy (which did not fall within a normal range despite transformation) to determine whether the failure to meet the normality assumption would affect results if the data were analysed using one-way ANOVA. The original and the transformed data were then analysed using a one-way ANOVA to make a comparison. It was concluded that results would not be significantly affected. Because ANOVA findings for the original and the transformed data demonstrate results with similar significance, and for ease of comprehension, the decision was made to use the original data for the analyses.

9.4. One-way ANOVA results for baseline (Time One) measures for mothers and fathers

One-way ANOVA results indicate that there are no statistically significant differences between groups for Time One measures for mothers or fathers.

Table 9.4.

Results for one-way ANOVA for dependent variables at baseline (Time One) for mothers and fathers.

Measure	Sum of squares	df	Mean Square	F	Sig.
Mothers dependent variables at baseline - original data					
Trait anxiety	5.374	2	2.687	.028	.973
Childbirth self-efficacy	7567.556	2	3783.778	1.914	.151
Pregnancy anxiety	61.431	2	30.715	1.148	.320
Parenting self-efficacy	263.082	2	131.541	.134	.875
Family life satisfaction	808.007	2	404.003	2.069	.130
Depression	5.155	2	2.578	.121	.886
Fathers dependent variables at baseline - original data					
Trait anxiety	15.923	2	7.962	.106	.900
Childbirth coaching self-efficacy	6927.631	2	3463.815	1.131	.326
Pregnancy anxiety	34.163	2	17.082	.691	.503
Parenting self-efficacy	1439.105	2	719.552	.850	.430
Family life satisfaction	107.083	2	53.541	.244	.784
Depression	1.063	2	.531	.034	.966

9.5. Levene's test of equality of variances

Levene's test examines the null hypothesis that the variability of scores for each of the groups is similar. The Levene's tests for mothers' dependent variables at baseline were not significant. Dependent variables at outcome for mothers gave one significant result suggesting that the variances for the groups for mothers' birth satisfaction were not equal. The Levene's tests for fathers' dependent variables at baseline were not significant with the exception of pregnancy anxiety. Dependent variables at outcome for fathers gave one significant result suggesting that the variances for the groups for fathers' birth satisfaction were not equal. When the data was transformed, Levene's test gave nonsignificant results for the three variables which had initially given significant test results.

9.6. Cronbach's alpha

Cronbach's alpha was determined for measurement tools each time they were used in the trial. The following table documents the findings.

Table 9.5.

Cronbach's alpha for the measurement tools used at baseline and outcome.

Cronbach's alpha				
	Mothers		Fathers	
Measurement tool	$\alpha =$ (baseline)	$\alpha =$ (outcome)	$\alpha =$ (baseline)	$\alpha =$ (outcome)
State Trait Anxiety Inventory (trait only) (Spielberger et al., 1983)	.94	-	.91	-
Pregnancy-Related Anxiety Scale (Rini et al., 1999)	.84	.83	.80	.81
CBSEI (Lowe, 1993)	.96	.97	.98	.98
Mackey Childbirth Satisfaction Rating Scale (Goodman et al., 2004)	-	.90	-	.92
Postpartum Parental Expectations Survey (Reece, 1992)	.94	.90	.91	.93
The Family Satisfaction by Adjectives Scale (Barraca et al., 2000)	.94	.95	.94	.97
Edinburgh Postnatal Depression Scale (10 items) (Cox et al., 1987)	.88	.84	.82	.84

Cronbach's alphas are all in the good to excellent range (equal to or greater than .8) indicating that the scales showed good internal consistency.

9.7. Appropriateness of adapted Mackey Childbirth Satisfaction Rating Scale for fathers

An analysis of the fathers' responses on the Mackey Childbirth Satisfaction Rating Scale was conducted to determine whether the use of this scale was appropriate for fathers. In the following table, results for fathers are presented with three comparison groups: firstly, mothers in this study, and then published data from another study using the same scale. It can be seen that, on the whole, the satisfaction ratings of fathers are similar to those of mothers in the current study, as well as for mothers internationally.

Table 9.6.

Mean scores from the six sections of the Mackey Childbirth Satisfaction Rating Scale (scores from 1-5). Higher scores indicate higher satisfaction.

	Fathers	Mothers	Belgium mothers*	Netherlands mothers*
General	4.11	3.79	4.14	3.93
Self	3.81	3.71	3.99	3.66
Baby	4.20	4.16	4.49	4.34
Midwife	4.25	4.33	4.62	4.33
Physician	3.24	2.98	4.37	4.05
Partner	3.97	4.55	4.74	4.59

*Belgium and Netherland data from Christiaens & Bracke, (2009). Table from Howarth, Scott, & Swain (2017).

However, satisfaction with physicians appears lower in this sample for both mothers and fathers than in international samples. This may be due to unfamiliar physicians being called in after complications have developed and when New Zealand parents are consequently stressed. This analysis gave support to Cronbach's alpha of $\alpha = .92$ which indicates good internal consistency. Consequently, the Mackey Childbirth Satisfaction Rating Scale, adapted for fathers, was considered a suitable measurement instrument for use with the New Zealand fathers participating in this trial.

The next chapter presents the demographics for each group and the results of the 3X2 repeated measures ANOVA analyses (and paired t-test post hoc tests) for childbirth/childbirth coaching self-efficacy; pregnancy anxiety; parenting self-efficacy; family life satisfaction; and postpartum depression, and the one-way ANOVA analysis (and the Tukey Honest Significance (HSD) post hoc tests) for birth satisfaction. Results of one-way ANOVAs at Time Two for childbirth/childbirth coaching self-efficacy; pregnancy anxiety; parenting self-efficacy; family life satisfaction; and postpartum depression are reported

Chapter 10 – Results: Randomized controlled trial analysis

10.1. Chapter Overview

This randomized control trial tested the effectiveness of the skills based childbirth/childbirth coaching preparation programme *The Pink Kit Method for Birthing Better*®. The primary outcome measure was **childbirth/childbirth coaching self-efficacy** at 36 weeks gestation, measured on the CBSEI (Lowe, 1993). Secondary outcomes were pregnancy anxiety at 36 weeks gestation, measured on the Pregnancy-Related Anxiety Scale (Rini et al., 1999); birth satisfaction, measured on the Mackey Childbirth Satisfaction Rating Scale (Goodman et al., 2004); parenting self-efficacy at six months, measured using the Postpartum Parental Expectations Survey, (Reece & Harkless, 1998); family life satisfaction at six months measured on the Family Satisfaction by Adjectives Scale (Barraca et al., 2000); and postpartum depression at six months, measured on the EPDS (Cox et al., 1987). Five measures (exception birth satisfaction which was measured once) were measured twice and compared over time and at Time Two.

10.2. Hypotheses summary

The hypotheses were that, for each of the five baseline/outcome comparisons, the skills based childbirth preparation programme, *The Pink Kit Method for Birthing Better*®, would show a greater beneficial impact on both the mothers and the fathers in the Intervention Group, when compared to each of the control groups, thus showing:

primarily: higher childbirth/childbirth coaching self-efficacy

secondarily: lower pregnancy anxiety; higher birth satisfaction; higher parenting self-efficacy; higher family life satisfaction; and lower incidence of postpartum depression

10.3. Results

10.3.1. Demographics collection

Demographic data were collected at the time of recruitment, between 5 and 24 weeks gestation. Some data, such as work status, do not reflect participants' situations post-birth. Mothers' and fathers' data were individually analysed. Not every couple had both partners eligible for analysis. Data from 137 mothers and 116 fathers were used in the per protocol analysis. There were 38 mothers and 31 fathers in the Intervention Group, 48 mothers and 40 fathers in the Active Control Group, and 51 mothers and 45 fathers in the Passive Control Group.

10.3.2. Age

At time of recruitment mean age of mothers for the whole sample was 29.15 years with a range of 19 to 41 years and the whole sample of fathers was 30.72 with a range of 20 to 49 years. A one-way ANOVA was conducted to determine whether groups were different in age characteristics. There were no significant differences between groups for either the mothers ($F [2,134] = 0.022, p = 0.978$) or the fathers ($F [2,113] = 1.266, p = 0.286$).

Table 10.1.

Mean age and range of ages of participants for mothers and fathers by Group.

Group	Mothers			Fathers		
	Mean	Min.	Max.	Mean	Min.	Max.
Intervention Group	29.2	19	41	30.4	20	49
Active Control Group	29.0	19	38	31.8	24	41
Passive Control Group	29.2	20	38	30.0	20	41

Where Min = minimum; Max = maximum

10.3.3. Other demographic characteristics

This sample was composed of 137 predominantly well-educated career women of European ethnicity and 116 predominately well-educated men of European ethnicity who were working full time. The majority of couples were married, owned their own homes, and earned in the higher income bracket.

Analysis gave evidence that there were no statistically significant differences between groups for fathers in any category ($p > .05$). However, mothers showed significant differences between groups for **work status*** ($p < .05$) (groups varied in the proportions of mothers working full-time, part-time, being at home, and being students) and **immigration status**** ($p < .05$) (more mothers from the Active Control Group had recently immigrated to New Zealand).

The following table gives the percentages for each group of mothers and fathers for the demographic variables examined in this research project.

Table 10.2

Demographic information for mothers and fathers shown in percentages by Group.

Demographic	Mothers' data			Fathers' data		
	Intervention	Active Control	Passive Control	Intervention	Active Control	Passive Control
Marital Status						
Married	60.5	70.8	58.8	67.7	75.0	60.0
De facto	39.5	29.2	41.2	32.3	25.0	40.0
Home Ownership						
Own home	60.5	54.3	62.7	61.3	50.0	57.8
Do not own home	39.5	45.7	37.3	38.7	50.0	42.2
Secondary Education						
None/don't know	2.6	2.1	3.9	9.7	7.5	6.6
NCEA 1/equivalent	5.3	10.4	7.8	9.7	12.5	11.1
NCEA 2/3/equivalent	71.1	62.6	74.5	67.7	55.0	62.2
Overseas sec. qual.	21.1	25.0	13.7	12.9	25.0	20.0
Tertiary education						
None	18.4	18.8	10.0	26.7	30.0	24.4
Tertiary cert./dipl.	13.2	25.0	26.0	13.4	37.5	66.6
Bachelor's degree	39.5	27.1	38.0	30.0	17.5	26.7
Post-Grad cert./dipl.	13.2	12.5	16.0	20.0	7.5	4.4
Master's degree	13.2	12.5	4.0	6.7	2.5	2.2
PhD degree	2.6	4.2	6.0	3.3	5.0	0.0
Work Status						
Working full time	52.6	70.8	78.4*	83.9	90.0	86.7
Working part time	13.2	8.3	11.8	0.0	5.0	4.4
Student	18.4	6.3	9.8	6.5	2.5	6.7
At home	15.8	14.6	0.0	9.7	2.5	2.2
Personal income						
No income	7.9	4.2	0.0	9.7	0.0	4.4
Up to \$25,000	31.6	12.5	15.7	9.7	5.0	8.9
\$25,001-\$50,000	26.3	33.3	39.2	22.6	25.0	40.0
Over \$50,001	31.6	47.9	45.1	54.8	70.0	44.4
Don't know	2.6	2.1	0.0	3.2	0.0	2.2
Household income						
Up to \$25,000	5.3	0.0	3.9	6.5	2.5	4.4
\$25,001-\$50,000	21.1	6.3	7.8	16.1	0.0	8.9
Over \$50,001	71.1	89.6	86.3	74.2	95.0	84.4
Don't know	2.6	4.2	2.0	3.2	2.5	2.2
Immigrated to NZ in the last 5 years?						
Yes	13.2	25.0	5.9**	6.5	17.5	13.3
No	86.8	75.0	94.1	93.5	82.5	86.7
Ethnicity***						
New Zealand Māori	7.9	8.3	3.9	6.4	5.0	11.1
European	97.4	93.8	98.0	93.5	90.0	88.9
Asian	2.6	2.1	2.0	3.2	0.0	2.2
Pacific peoples	2.6	2.1	0.0	0.0	0.0	2.2
MELAA****	2.6	4.2	0.0	0.0	5.0	6.7

*** A number of participants identified with more than one ethnicity resulting in totals which do not equal 100%

****Middle Eastern/Latin American/Africa

Where sec. = secondary; qual. = qualification; cert. = certificate; dipl. = diploma; post-grad. = post-graduate

10.4. 3X2 repeated measures ANOVA and one-way ANOVA analyses– Mothers

10.4.1. Childbirth self-efficacy - Mothers

Repeated measures ANOVA gave evidence that there was a significant interaction between group and time ($F [2, 134] = 6.212, p = 0.003$) as can be seen in Figure 10.1.

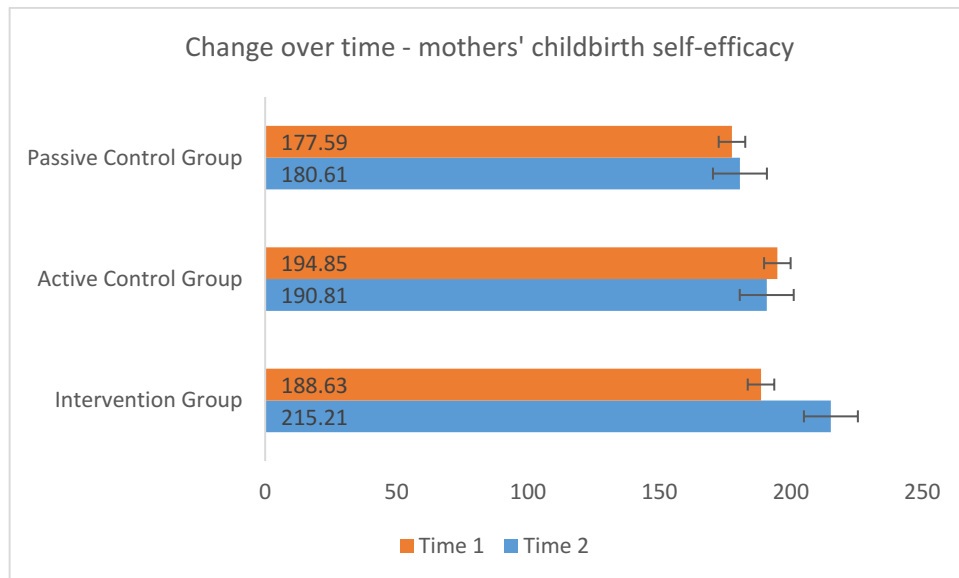


Figure 10.1. Showing changes in means, with error bars, across two time periods for the three groups (Intervention Group, Active Control Group and Passive Control Group) for mothers' childbirth self-efficacy where Time 1 = baseline measure and Time2 = 36 weeks gestation outcome measure. A higher score reflects an increase in childbirth self-efficacy.

Evidence shows no statistically significant change over time for either the Active Control Group ($t [47] = 0.638, p = 0.527$) or the Passive Control Group ($t [50] = -0.608, p = .546$). Evidence shows a statistically significant change over time for the Intervention Group ($t [37] = -3.628, p = 0.001$). The Intervention Group showed a positive change in mean scores compared to the relatively unaffected mean scores in both the Active Control and the Passive Control Groups. This showed a greater **increase** in childbirth self-efficacy between Time One and Time Two for the mothers in the Intervention Group compared to the Active and Passive Control Groups.

Table 10. 3.

Mean scores for childbirth self-efficacy for the three groups (Intervention Group, Active Control Group and Passive Control Group) across two time periods for mothers where Time 1 (baseline measure) and Time2 (outcome measure at 36 weeks gestation).

	Intervention Group			Active control Group			Passive control Group			Total SD
	M	SD	N	M	SD	N	M	SD	N	N = 137
Time Period										
Time 1	188.63	43.405	38	194.85	38.425	48	177.59	50.149	51	44.756
Time 2	215.21	38.708	38	190.81	38.142	48	180.61	46.466	51	43.597

Where M = mean; SD = Standard deviation; N = number

Effect size for the influence of the intervention was determined using the following formula:

$$\begin{aligned} & (\text{Intervention Group mean Time 2 minus Intervention Group mean Time 1}) \text{ divided by} \\ & (\text{Total Time 1 standard deviation}) = \text{effect size} \\ & (215.21 - 188.63) \div (44.756) = 0.594 \end{aligned}$$

There was a strong effect (0.594) of the intervention on mothers' childbirth self-efficacy over time. These findings support the hypothesis for the primary outcome that mothers in the Intervention Group would show a greater increase in childbirth self-efficacy between Time One and Time Two, compared to the two control groups.

A one-way ANOVA determined that at Time Two, there was a significant difference between groups for childbirth self-efficacy. At Time Two, mothers in the Intervention Group showed higher childbirth self-efficacy compared to the two control groups.

Table 10.4.
ANOVA results of mothers' childbirth self-efficacy at Time Two by group.

	N	mean	SD	F	p
CBSEI					
Intervention	38	215.21	38.708	7.725	.001**
Active Control	48	190.81	38.142		
Passive Control	51	180.61	46.466		

Significance **p<.01

Table 10.5.
Mothers' childbirth self-efficacy multiple comparisons of means – Tukey HSD.

Measure	Mean Difference	Std. Error	p
CBSEI			
Intervention-Active Control	24.398	9.031	.021*
Intervention-Passive Control	34.603	8.912	<.001**
Active Control-Passive Control	10.205	8.363	.443

Significance **p<.01, *P<.05

The Tukey HSD post hoc test revealed that mothers in the Intervention Group showed significantly higher childbirth self-efficacy at Time Two compared to mothers in the Active and Passive Control Groups. There were no significant differences between the Active and Passive Control Groups.

10.4.2. Pregnancy anxiety - Mothers

For mothers there was no evidence of a statistically significant interaction between group and time ($F [2, 134] = 0.341, p = 0.711$). This finding does not support the hypothesis that mothers in the Intervention Group would show a greater decrease in pregnancy anxiety between Time One and Time Two, compared to the two control groups.

10.4.3. Parenting self-efficacy - Mothers

For mothers there was no evidence of a statistically significant interaction between group and time ($F [2, 134] = 1.578, p = 0.210$) in parenting self-efficacy scores. This finding does not support the hypothesis that mothers in the Intervention Group would show a greater increase in parenting self-efficacy between Time One and Time Two, compared to the two control groups.

10.4.4. Family life satisfaction - Mothers

Repeated measures ANOVA gave evidence that there was a significant interaction between group and time for the mothers in the Intervention Group ($F [2, 134] = 4.216, p = 0.017$) as can be seen in Figure 10.2.

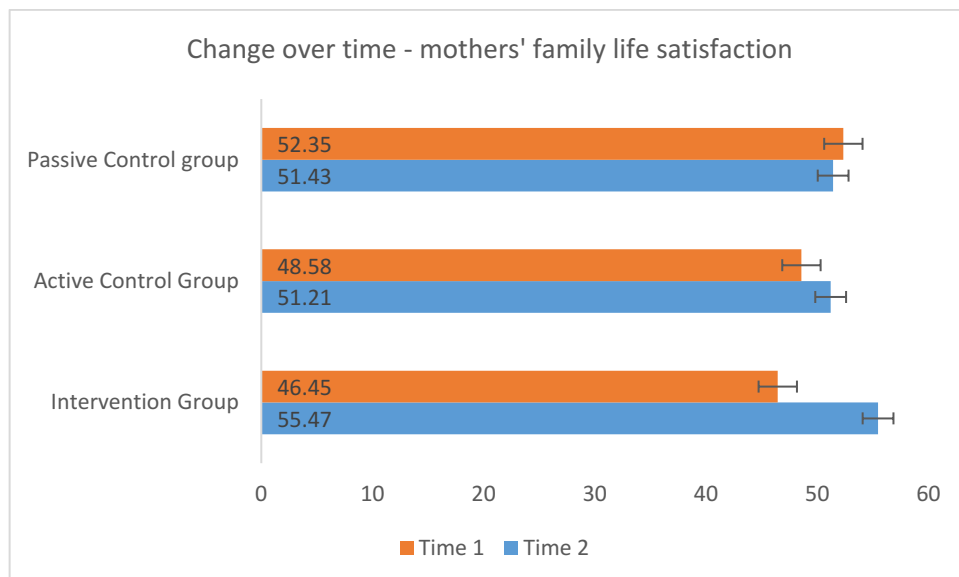


Figure 10.2. Showing changes in means, with error bars, across two time periods for the three groups (Intervention Group, Active Control Group and Passive Control Group) for mothers' family life satisfaction where Time 1 = baseline measure and Time2 = six months outcome measure. **A higher score reflects a decrease in family life satisfaction.**

Evidence shows no statistically significant change over time for the Active Control Group ($t [47] = -1.083, p = .284$) and the Passive Control Group ($t [50] = 0.385, p = 0.702$). Evidence shows a statistically significant change over time for the Intervention Group ($t [37] = -4.148, p < 0.001$). The Intervention Group showed a large positive change in mean scores compared to the relatively small changes in mean scores in both the Active Control and the Passive Control Groups, reflecting a greater **decrease** over time in family life satisfaction for mothers in the Intervention Group.

Table 10.6.

Mean scores for family life satisfaction for the three groups (Intervention Group, Active Control Group and Passive Control Group) across two time periods for mothers where Time 1 (baseline measure) and Time2 (six months outcome measure). A higher score reflects a decrease in family life satisfaction.

	Intervention Group			Active control Group			Passive control Group			Total SD
	M	SD	N	M	SD	N	M	SD	N	N = 137
Time Period										
Time 1	46.45	12.313	38	48.58	13.985	48	52.35	15.074	51	14.082
Time 2	55.47 ¹	16.415	38	51.21	14.682	48	51.43	16.790	51	15.966

Effect size for the influence of the intervention was determined using the following formula:

$$\begin{aligned}
 & (\text{Intervention Group mean Time 2 minus Intervention Group mean Time 1}) \div \\
 & (\text{Total Time 1 standard deviation}) = \text{effect size} \\
 & (55.47 - 46.45) \div (14.082) = 0.641
 \end{aligned}$$

There was a strong effect (0.641) of the intervention on mothers' family life satisfaction over time with mothers in the Intervention Group showing decreased family life satisfaction. These findings run counter to the hypothesis that mothers in the Intervention Group would show a greater increase in family life satisfaction between Time One and Time Two, compared to the two control groups.

However, a one-way ANOVA also determined that at Time Two there was no significant differences between groups for family life satisfaction for mothers.

Table 10.7.

ANOVA results of mothers' family life satisfaction at outcome by group.

	N	mean	SD	F	p
Family life satisfaction					
Intervention	38	55.47	16.415	.929	.397
Active Control	48	51.21	14.682		
Passive Control	51	51.43	16.790		

10.4.5. Postpartum depression - Mothers

For mothers there was no evidence of a statistically significant interaction between group and time ($F [2, 134] = 1.142, p = .322$). This finding does not support the hypothesis that mothers in the Intervention Group would show a higher decrease in the incidence of postpartum depression between Time One and Time Two, compared to the two control groups.

¹ Higher score indicates lower family life satisfaction

10.4.6. Other Time Two comparisons - Mothers

One-way ANOVAs determined that at Time Two there were no significant differences between groups for pregnancy anxiety (36 weeks gestation), parenting self-efficacy (six months), and postpartum depression (six months) for mothers.

10.5. One-way ANOVA analysis of birth satisfaction - Mothers

For mothers, group differences in birth satisfaction were statistically significant. The Tukey Honest Significance (HSD) post hoc test was used to determine if the statistically significant ANOVA findings for birth satisfaction for mothers indicated higher scores, and therefore higher birth satisfaction, for the Intervention Group compared to either the Active Control or the Passive Control Groups.

Table 10.8.
ANOVA results for birth satisfaction by group for mothers.

	Number	Mean	SD	F	p
Birth satisfaction					
Intervention	38	159.35	20.685	6.457	.002**
Active Control	48	160.46	17.326		
Passive Control	51	146.53	24.616		

Significance **p<.01

Table 10.9.
Multiple comparisons of means for birth satisfaction for mothers – Tukey HSD.

Measure	Mean Difference	Std. Error	p
Birth Satisfaction			
Intervention-Active Control	-1.106	4.604	.969
Intervention-Passive Control	12.819	4.544	.015*
Active Control-Passive Control	13.925	4.264	.004**

Significance *p < 0.05, **p < 0.01

The Tukey HSD post hoc test revealed that there was no significant difference between the Intervention Group and the Active Control Group for birth satisfaction for mothers. However, mothers in both the Intervention Group and the Active Control group experienced significantly higher satisfaction with their birth experience than did mothers in the Passive Control Group. This finding supported the hypothesis that mothers in the Intervention Group would experience significantly higher birth satisfaction than mothers in the Passive Control Group but did not support the hypothesis that mothers in the Intervention Group would experience significantly higher birth satisfaction than mothers in the Active Control Group.

Note: A one-way ANOVA analysis of task completion of the intervention package by the Intervention Group found that mothers completed significantly more of the intervention than the fathers did ($F [1, 67] = 10.053, p = 0.002$).

10.6. 3X2 repeated measures ANOVA and one-way ANOVA analyses - Fathers

10.6.1. Childbirth coaching self-efficacy - Fathers

For fathers there was no evidence of a statistically significant interaction between group and time ($F [2, 113] = 0.963, p = 0.385$). This finding does not support the hypothesis that fathers in the Intervention Group would show a greater increase in childbirth coaching self-efficacy between Time One and Time Two, compared to the two control groups.

10.6.2. Pregnancy anxiety – Fathers

For fathers there was no evidence of a statistically significant interaction between group and time ($F [2, 113] = 0.207, p = 0.813$). This finding does not support the hypothesis that fathers in the Intervention Group would show a greater decrease in pregnancy anxiety between Time One and Time Two, compared to the two control groups.

10.6.3. Parenting self-efficacy – Fathers

For fathers there was no evidence of a statistically significant interaction between group and time ($F [2, 113] = 1.673, p = .192$). This finding does not support the hypothesis that fathers in the Intervention Group would show a greater increase in parenting self-efficacy between Time One and Time Two, compared to the two control groups.

10.6.4. Family life satisfaction - Fathers

For fathers there was no evidence of a statistically significant interaction between group and time for family life satisfaction ($F [2, 113] = .342, p = .711$). This finding does not support the hypothesis that fathers in the Intervention Group would show a greater increase in family life satisfaction between Time One and Time Two, compared to the two control groups.

10.6.5. Postpartum depression – Fathers

For fathers there was no evidence of a statistically significant interaction between group and time ($F [2, 113] = .793, p = .455$). This finding does not support the hypothesis that fathers in the Intervention Group would show a higher decrease in the incidence of postpartum depression between Time One and Time Two, compared to the two control groups.

10.6.6. Time Two comparisons - Fathers

One-way ANOVAs determined that at Time Two there were no significant differences between groups for childbirth coaching self-efficacy (36 weeks gestation), pregnancy anxiety

(36 weeks gestation), parenting self-efficacy (six months), family life satisfaction (six months), and postpartum depression (six months) for fathers.

10.7. One-way ANOVA analysis for birth satisfaction – Fathers

A one-way ANOVA was used to test the hypothesis that fathers in the Intervention Group would show higher birth satisfaction compared to the two control groups. For fathers, group differences in birth satisfaction were statistically significant. The Tukey Honest Significance (HSD) post hoc test was used to determine if the statistically significant ANOVA findings for birth satisfaction for fathers indicated higher scores, and therefore higher birth satisfaction, for the Intervention Group compared to the Active and Passive Control Groups.

Table 10.10.
ANOVA results for birth satisfaction by group for fathers.

	Number	Mean	SD	F	p
Birth satisfaction					
Intervention	31	160.80	13.381	4.436	.014*
Active Control	40	160.96	16.384		
Passive Control	44	150.82	20.976		

Significance *p < 0.05

Table 10.11.
Multiple comparisons of means for birth satisfaction for fathers – Tukey HSD.

Measure	Mean Difference	Std. Error	p
Birth Satisfaction			
Intervention-Active Control	-.166	4.216	.999
Intervention-Passive Control	9.974	4.131	.045*
Active Control-Passive Control	10.140	3.849	.026*

Significance *p < 0.05

The Tukey HSD post hoc test revealed that there was no significant difference between the Intervention Group and the Active Control Group for birth satisfaction for fathers. However, both the Intervention Group and the Active Control Group were significantly different from the Passive Control Group. However, fathers in both the Intervention Group and the Active Control Group experienced significantly higher satisfaction with their birth experience than did fathers in the Passive Control Group. This finding supported the hypothesis that fathers in the Intervention Group would experience significantly higher birth satisfaction than the Passive Control Group but did not support the hypothesis that fathers in the Intervention Group would experience significantly higher birth satisfaction than the Active Control Group.

10. 8. RCT results summary

10.8.1. Summary tables of results for 3x2 repeated measures ANOVA

The following tables provide a summary of the 3X2 repeated measures ANOVA analyses of variance conducted to test the hypotheses related to the five dependent variables of interest for the mothers and fathers: childbirth self-efficacy (36 weeks gestation), pregnancy anxiety (36 weeks gestation), parenting self-efficacy (six months postpartum), family life satisfaction (six months postpartum), and postpartum depression (six months postpartum).

Table 10.12.

Findings of a 3X2 repeated measures ANOVA of the interaction effect of changes in scores over time (Time 1 and Time 2) for the 3 different groups (Intervention, Active and Passive Controls) for each dependent variable for mothers.

Effect	F	p
Time 1 = baseline measure (24 weeks gestation)		
Time 2 = outcome measure		
Childbirth self-efficacy - Time*GroupNo	6.212	.003**
Pregnancy anxiety - Time*Group	.341	.711
Parenting self-efficacy – Time*Group	1.578	.210
Family life satisfaction -Time*Group	4.216	.017*
Postpartum depression - Time*Group	1.142	.322
Significance *p < 0.05, **p < 0.01		

There were two statistically significant results for mothers. Mothers in the Intervention Group showed higher childbirth self-efficacy, and less family life satisfaction compared to the Active and Passive Control Groups.

There were no statistically significant findings for fathers.

Table 10.13.

Findings of a 3X2 repeated measures ANOVA of the interaction effect of changes in scores over time (Time 1 and Time 2) for the 3 different groups (Intervention, Active and Passive Controls) for each dependent variable for fathers.

Effect	F	p
Time 1 = baseline measure (24 weeks gestation)		
Time 2 = outcome measure		
Childbirth coaching self-efficacy - Time*Group	.963	.385
Pregnancy anxiety - Time*Group	.207	.813
Parenting self-efficacy - Time*Group	1.673	.192
Family life satisfaction	.342	.711
Postpartum depression -Time*Group	.793	.455

10.8.2. Time Two comparisons

An ANOVA showed that childbirth self-efficacy was statistically significant for mothers at Time Two. The Tukey HSD post hoc test revealed that mothers in the Intervention Group showed significantly higher childbirth self-efficacy at Time Two compared to the other two groups. One-way ANOVAs showed that at Time Two there were no significant

differences between groups for pregnancy anxiety, parenting self-efficacy, family life satisfaction, or postpartum depression for mothers.

One-way ANOVAs showed that at Time Two there were no significant differences between groups for childbirth coaching self-efficacy, pregnancy anxiety, parenting self-efficacy, family life satisfaction, or postpartum depression for fathers.

10.8.3. Summary for birth satisfaction

For both mothers and fathers, group differences in birth satisfaction were statistically significant. The Intervention and Active Control Groups reported higher birth satisfaction than the Passive Control Group.

The following chapter presents the results for the mother's story.

Chapter 11 - Results - The mothers' story

11.1. Chapter overview

Responding to a quantitative survey question can be frustrating when none of the response options are seen as an exact match for the participants' perceptions of their experience. One woman in the study commented that she did not relate to the word *dissatisfaction* in regard to her experience of giving birth. Rather the word *disappointment* was a better fit. Consequently, the third questionnaire, completed soon after the birth, was designed to give parents an opportunity to describe and comment on their childbirth experiences. This gave participants an opportunity to tell of their experiences in ways that gave depth and meaning to their experiences. All participants used this opportunity to make comments to explain in detail at least one of their answers related to their childbirth experiences, some participants feeling the need to comment on most of the questions in the survey. Participants were generous in the very personal and intimate information which they shared. The following shares the mother's story.

11.2. Results: The mother's story

This analysis examines the experiences and the impact of these experiences on 162 mothers from the onset of labour until the early hours after the birth of the baby. It was clear to them what had been a pleasing experience and why, and what had not been a pleasing experience and why. While quotations were taken from the comments to support statements made, sometimes the mothers expressed a point so well that their own words encapsulated the position with little need for interpretative summary.

Each mother had her own unique experience of bringing her child into the world. One mother described a satisfying experience of birth as:

Being at home. Having the right people there. Not tearing. The pain being manageable. No complications. No interventions. No pain relief. Helpful people, good midwives, having the right environment, music, lighting, birthing pool, my baby being so healthy at birth, it not taking as long as expected, just 'doing it!' and being OK :-) Not dying. (062)

But not all mothers had similar experiences and consequently the events which made them perceive their experiences as satisfying or dissatisfying varied. Comments quoted were made by mothers to explain why they classed their experiences as satisfying or dissatisfying. Quotes are identified by the mother's study number.

11.3. Outline of the themes extracted

THREE major themes were identified as closely related to the concept of birth satisfaction for mothers. They capture the progression of the birth experience. These were:

1. *Owning the process*
2. *Support/care and supporters/carers*
3. *Feeling safe physically and psychologically*

Comments refer specifically to the mother's initial planning for (theme 1), and experiences of, labour and delivery (themes 2 and 3). Encapsulated within each major theme were several subthemes.

Table 11.1

Outline of the major themes with their subthemes showing influences on first-time mother's birth satisfaction.

Major Themes	<i>Owning the process</i>	<i>Support/care and supporters/carers</i>	<i>Feeling safe physically and psychologically</i>
Subthemes	<ul style="list-style-type: none"> ● <i>Seeking information</i> ● <i>Making choices, including</i> <ul style="list-style-type: none"> -Choosing supporters -Choosing LMCs -Choosing the environment for birth -Choosing effective pain management strategies ● <i>Making a birth plan</i> ● <i>Expectations</i> 	<ul style="list-style-type: none"> ● <i>Relationships – known and trusted</i> ● <i>Attitudes of supporters and carers</i> ● <i>Communication</i> ● <i>Feeling Informed</i> ● <i>Continuity of care</i> 	<ul style="list-style-type: none"> ● <i>Professionalism, including</i> <ul style="list-style-type: none"> -Midwife professionalism -Medical staff professionalism ● <i>Control of self during labour and delivery</i> ● <i>Control of decision making</i> ● <i>Interventions</i> ● <i>Hospital facilities, including</i> <ul style="list-style-type: none"> -Medical resources -Accommodation resources ● <i>Healthy baby/healthy mum, including</i> <ul style="list-style-type: none"> -Held baby right away -Skin on skin -Breastfeeding

As all themes are related to the concept of birth satisfaction, there is some overlap as some subthemes are analyzed from different perspectives (i.e. planning and actual experience).

11.4. Theme 1: *Owning the process*

The first theme, *owning the process*, is a retrospective examination of the steps mothers took to *own their process* of childbirth. Mothers who felt that they understood and had prepared for the birthing process, and that their bodies performed as nature intended, demonstrated the desire felt by some mothers to move away from the medicalization of birth and see birth as a natural life event. They were motivated by the desire to just get on with it, as seen in the following:

*I was well prepared mentally and physically, I had a midwife who let me get on with it (078)
[...] mindset of myself and everyone at the birth that this is a natural life event and my body is
capable of doing it – not (necessarily) a medical emergency (046)*

Mothers who saw themselves as having responsibility for their own experience of birth and who achieved their goals were satisfied with their experience as expressed by the following participant:

*I was the key person, my pre-planning and prep [preparation] meant all present knew the
experience I wanted and we were able to achieve that [home birth] (176)*

Those mothers whose bodies struggled with the birthing process judged themselves as having failed:

*[I was dissatisfied with] My own body's inability to be able to give birth without intervention
(064)*

11.5. Subthemes of *owning the process*:

11.5.1. *Seeking information*

Owning the process involved mothers actively seeking out the information they perceived as necessary to understand and manage their labours and birth. Mothers actively engaged in self-education and this contributed towards their self-confidence:

*[...] the knowledge and confidence I had at my disposal from studying the programme material
– it gave me positive strategies and methods to use (142)*

This self-education enabled mothers to perceive themselves as women who would cope no matter what eventuated:

*[...] [Their] awareness of all types of birthing possibilities, and positive attitude towards
whichever experience evolved (094)*

gave them a sense of power that increased their satisfaction. Those mothers who had not

informed themselves as thoroughly expressed dissatisfaction after the birth. This reflected their perceived disappointment in themselves and awareness that they could have done more to help themselves:

I wish I was more knowledgeable and schooled up on Hypnobirthing breathing techniques. Could have been helpful (152)

11.5.2. Making choices

Information enabled mothers to make choices about what they needed and wanted for their own labour and birth experiences. Choice was important as mothers sought to ensure their birth experience would suit their own needs.

Choosing supporters was of prime importance. Mothers felt the need to have familiar people who knew and understood them close by, people who could encourage and console, who could provide strength in those moments when they felt their own strength desert them. The partners primarily filled this role, along with family members and some close friends:

[...] he was amazing, doing everything he could for me, massages, cuddles, food etc. he ran me baths at home and gave me long massages, did everything I asked, barely left my side the whole time (179)

My partner was a source of enormous strength and comfort to me during the labour, as was my mother who was also with us (042)

When the partner was unavailable for some reason, the mother felt distressed and unhappy and expressed overall dissatisfaction with her experience.

he left after one day of being in labour and couldn't get back to the hospital [labour 3 days] (026)

For some mothers, it was enough that their partner was present, even if he played a secondary support role to another. One mother expressed her satisfaction with her birthing partner (a friend chosen for this role):

[...] she knew more about the programme than partner as she had more interest. (142)

The choice of a LMC was also a major concern. Issues of professionalism, trust, and compatibility guided this search. Mothers wanted to be confident that their LMC understood both them and their needs and would work with them to ensure a good outcome. For most mothers in this study, an independent midwife fulfilled this role. However, a small number elected to choose a private obstetrician as their LMC. Birth satisfaction was enhanced when the LMC performed as expected:

The support of one of my LMC midwives (I had a team of 3) in particular was exactly what I needed. We had excellent rapport and she met some of my needs that not many other people would've been able to. (044)

My obstetrician listened to what I wanted and worked with me to try to achieve this. He had a relaxed demeanour and I had confidence in his decision making, so when we made the decision for an elective caesarian I did not feel pressured into it and had time to come to terms with it. (044)

There were instances when a mother's LMC could not be available for the labour and/or birth. The alternate care the LMC did, or did not arrange, impacted strongly on the mother's experience. So, while one mother would report herself satisfied with the arrangement:

My normal midwife was on holiday so I had a fill in, was a bit upset about that but she was good and the student midwife that came with her was fantastic (139)

Another reported herself very dissatisfied:

[my midwife] was not there at all due to other people being in labour under her care and i did not see her at all before or after Caesarean (134)

Mothers focused on planning the environment they wanted to give birth in. As well as familiar people, mothers wanted a familiar environment in which they could feel relaxed and safe. For some that meant home birth where they felt that they would have complete control and no unacceptable protocols. This allowed them to create their own birth plans exactly as they wished:

[I wanted] a relaxed, familiar environment, dimmed lighting, no 'protocols' to follow, only familiar and chosen people there. (046)

My husband ... prepared the birthing pool and ensured the home environment was safe, warm, dimly lit and only those I wanted were present... Being at home meant I felt supported and safe. (157)

Others felt a hospital birth was more appropriate for their needs. These mothers wanted to cover all bases. If something went wrong, they wanted to be close to the resources a hospital offered. These included:

[...] a safe environment (164)

[knowledge] that I was in good care and that whatever happened the end product would be the same.... ie a healthy baby at birth (144)

When choosing effective pain management strategies, many mothers preferred to

attempt medication free labour and birth for the sake of the baby and so that they could fully experience labour. To this end, they learned breathing and other techniques to assist them achieve this. Those that achieved their goal were pleased with themselves and found the experience very empowering:

Not having any medication and realising that I had the ability to have a drug-free childbirth experience - this was very empowering. (051)

I chose not to use pain relief so knew it wouldn't be comfortable but wanted to experience it. (120)

I have a low pain threshold and thought I would not manage to cope with the labour pain but I managed it a lot better than I thought! Very proud of myself. (123)

Those mothers who did not perceive themselves as coping as well as they wanted expressed dissatisfaction with themselves and their experience, even though, at times, circumstances worked against them. Sometimes they were harsh judges of their own performances. Others were kinder to themselves:

I'm a wimp. (070)

I felt a bit like I let myself down having used the gas and air (making me feel a bit dissatisfied), however I feel like I managed very well for 32 hours before using the gas (started using the gas when my membranes were ruptured), so that makes me satisfied with my labour experience. (112)

Other mothers either planned to use, or chose to take advantage of, the pain medications available. They felt comfortable with their decision to block the pain and expressed their satisfaction with their choice and the pain relief experienced:

[...] for first three hours of labour I felt I did well, however chose epidural and happy with the decision. (083)

[...] having an epidural early on in the timeframe, before syntocin was administrated; being painfree. (012)

11.5.3. Making a birth plan

Once a mother had made her choices, she could complete her birth plan. Making a birth plan helped to ensure everyone involved with the labour and birth would have knowledge of the mother's likes and dislikes when it came to her time to give birth. Those mothers who had formulated a birth plan and had their support people adhere to it as closely as circumstances permitted expressed greater satisfaction than those who had not formulated a birth plan:

My support people, my midwife and myself had discussed the birth plan prior and we were all on the same page. (157)

[My midwife was] committed to helping me achieve my birth plan and deliver naturally and at home (176)

My midwife sticking to the birth plan as much as possible (036)

Dissatisfaction after the birth was expressed if there had been:

No birth plan (027)

and

That it didn't go as planned (116)

Having a plan of action and having the labour and birth follow this plan added to a mother's sense of control in her process, while not having a plan, or having the birth deviate from an established plan, lessened this sense of control and ultimately the satisfaction experienced.

11.5.4. Expectations

Mothers found it difficult to know what to expect. This was a new experience for them and one they knew was going to be different for everyone. Some mothers had high expectations, or hopes for what they would experience. Others claimed to have low expectations so that they would not be disappointed. However, they all had hopes that their labours and births would go well and give a great outcome:

[It was] hard to know what to expect and it's such an individual experience (054)

{I} was unsure what to expect really. Felt it better to not have too many expectations so that if things didn't go to plan I wouldn't be hung up or upset about that. (055)

Mothers were satisfied when their labour and birth was perceived as meeting most of their expectations or was better than expected:

[It met] most of my main priorities (015)

I had low expectations, I wasn't expecting it to be overly positive and wouldn't have been surprised if I'd had a c-section so to have a ventouse was ok. (038)

And disappointed and dissatisfied when their experience of labour and birth did not go to plan, even though they may have agreed that an intervention was medically necessary. They expressed their dissatisfaction when:

[I ended] up with ventouse and caesarean when I planned on having a natural birth. (020)

[I was] induced when I thought my body would do it naturally. (036)

[I was] unprepared for baby being posterior, birthing pool not ready when I arrived. (143)

[I had] to get out of the water for the final part of labour so that baby could be born safely, as I did not have the strength to do so in the water. (179)

11.6. Theme 2: Support/care and supporters/carers

The second theme, *support/care and supporters/carers*, demonstrated the lasting impact of those people who were a part of the mother's process in giving birth. When supporters and carers were perceived in a positive light mothers expressed great satisfaction with:

[...] how comfortable I felt due to all the support (093)

[...] having a great support team during the birth - my partner, my mum and a friend. I felt like they all played a role and no one was surplus to requirements. (045)

However, not all mothers felt themselves as well supported, or cared for, and this caused them to feel distressed and dissatisfied:

The midwife we had at first in delivery suite wasn't very friendly which made me anxious. (053)

Midwife being very negative! (075)

11.7. Subthemes of support/care and supporters/carers:

11.7.1. Relationships – known and trusted

Having known and trusted people around her gave a mother confidence that all would be well in the end, no matter how her labour and birth progressed. She relied on these people to keep her focused when she could not find the internal resources herself, to soothe her when she felt it was all too much, and to make the right decisions when she felt unable. Feeling complete trust in her supporters and carers enabled her to cope, especially when unexpected complications developed. When support people were more aware and did more than she ever expected of them she expressed amazement with her gratitude. This all contributed towards a satisfactory birth experience no matter how the labour and birth evolved:

Amazing - I thoroughly trusted her during labour and delivery and she took charge of transfer to [...] hospital (148)

I was pretty much in "labour land", so I don't know how good my decision making was, but at the time, I just did what my midwife recommended, and I trust her 100%. (117)

I was upset and it was hard but my husband was wonderful and coached me through it. (115)

I drew on his strength – he kept telling me I could do it and that I was doing a good job. I wondered how he knew but believed him. (158)

11.7.2. Attitudes of supporters and carers

A mother in labour and giving birth is very vulnerable and easily distressed by the attitudes of others around her. When she felt they respected her as a person and understood her travail, her experience was enhanced and she felt accepted and valued. Comments from those satisfied by the attitudes of those around them included:

Everything happened very fast in the end but the doctors and delivery staff were very gentle and supportive and understanding, treated me like a person and not just a patient. (123)

[...] when decisions were needed, my support people and midwife included me and respected my wishes. (157)

He [partner] was so supportive throughout the whole process, even when I was abusing him. (053)

People treated me with support and sensitivity (089)

Staff were warm and respectful and allowed us time to digest recommendations for intervention. (105)

However, when she perceived their attitudes to be disrespectful, harsh, impatient and lacking in empathy, her doubts about herself and her coping were enhanced and she felt that her experience of the birth of her child had been compromised causing her to express dissatisfaction:

[...] he [partner] thought I was over-reacting when in a lot of pain at home and wanted to get some sleep before going to hospital so didn't want to massage etc. (187)

There was no help or support, especially in terms of the relaxation factor. I was up front about the specialist making me scared but she was completely unsympathetic and turned it back on me. (095)

[...] was a nice experience until doctor came in and told me I had to make a decision NOW! About ventouse or c-section as she was going into surgery in 30 minutes. Also while pushing I was told not to yell or make any noise. (023)

No mother in the study wanted a caesarean delivery but circumstances meant approximately one third of mothers required surgery as a result of some medical issue. How this was handled by the medical staff and the midwife had a profound effect on how the mother dealt with this unwanted intervention. These mothers expressed themselves as very satisfied:

I felt in control and fully supported in decision-making during the delivery. Choosing a

caesarean was very distressing and disappointing for me, coming on top of very little sleep and having been nil by mouth for 12 hours. The hospital staff were incredibly supportive, thoughtful and respectful throughout the entire process and during the follow-up care. (042)

[The] anaesthetist was very relaxed and humorous – obstetrician knowledgeable, assertive, reassuring, fantastic (056)

Others felt attitudes were critical and this undermined and detracted from their experience. The following comments reflected the doubt mothers experienced and left them with a mix of negative emotions about themselves and their decisions:

[The midwife] Commenting on how I can deliver this baby naturally and shouldn't of really had a section! (075)

11.7.3. Communication

Professionals may forget just how important good communication is for the wellbeing of their patients (Howarth, 2010). While the professionals may know what they are doing, their patients may not understand what is happening to them. Good communication amongst professionals, and with their patients, greatly enhances the satisfaction patients experience with their treatment. Good communication increases the patients' confidence in the treatment. It enhances their perception of themselves as individuals rather than feeling themselves just a body in need of professional expertise:

Despite being in theatre with so many people, all were very good communicators and were reassuring and personable. (083)

They [theatre staff] introduced themselves to us, talked us through it. Just amazing I didn't think they'd be so amazing, the anaesthetist talked to me to distract me, he also moved the curtain so I could watch partner cut his cord. (071)

When communication amongst colleagues and with the patient was poor, mothers suffered negative emotions. They felt discounted, angry, out of control, and forced to do things they were not sure were necessary. Such experiences resulted in dissatisfaction:

[medical] staff asked same questions numerous times due to lack of communication between parties – difficult to answer such questions when only 30 seconds break between contractions ... Doctor opened delivery room door, asked if there was a baby, when 'no' was said – response was 'take her upstairs'. (018)

I'm very angry that ... that I was not listened to. I spent months discussing my c-section versus induction options with my high risk care team and they agreed that if induction was not

favourable then I could elect to have a c-section. This did not happen and the induction wasn't favourable at all. (077)

[I] had epidural, didn't feel as in control, felt forced to have a c-section. (167)

Mothers were also disturbed by, and dissatisfied, if there was poor communication between their LMC and the medical team. Once a medical team was called in the labour and/or birth had already developed complications causing distress and tension for the mother. Poor communication between the team and LMC resulted in unnecessary doubling up of questions and conflict of instructions which added to the mother's anxiety:

Lack of communication between hospital team (secondary care due to diabetes) and my LMC. I chose my midwife, but when I developed GD, was referred to the hospital, they then both were looking after me and I felt as if there was a lot of doubling up on things and they didn't communicate with each other very efficiently. (029)

There was a room full of people due to the situation all giving me instructions and arguing – this wasn't particularly relaxing [baby 7 weeks early]. (120)

11.7.4. Feeling Informed

Mothers needed to feel informed of what was happening both for themselves and for their babies. Those who felt they understood what was happening, or were confident their trusted supporters were fully conversant with the necessity of procedures recommended when they were unable to focus, found they could cope with the complications experienced and still feel satisfied with their experiences, even though their labours and/or deliveries had not gone to plan:

Medical staff were brilliant – anaesthetist explained all stages of what was happening to help manage my anxiety and very good bedside manner. (105)

It was traumatic but ... the doctor was really good and helped me understand what was happening. (096)

I was fully informed of the benefits and risks, and had full control over the choice to have the c-section. (094)

Those mothers who did not feel they were kept informed of the necessity for interventions and the potential consequences of these interventions questioned the decisions made. They were left feeling that interventions may not have been necessary. This may have left them feeling they had been cheated of a natural birth and had had to endure unnecessary trauma and disappointment. They expressed their dissatisfaction:

[I am] still unsure why I had to have an emergency c-section (079)

[...] very little information given once decision made for c-section. (018)

No one really explained to me the recovery after operation and transfusion (081)

11.7.5. Continuity of care

When a mother experienced continuity of care throughout her labour and delivery she felt comfortable with the connection established and sure that the care she needed would be available when needed. If she was having a hospital birth, she felt relieved that she would not have the added pressure of having to cope with changing shifts of unfamiliar caregivers:

We had a private [midwife] provided through our OB and she was INCREDIBLE and stayed with me the entire time so no need to worry about changes in shifts etc. and was encouraging, chatty, fun and just WONDERFUL (104)

she [midwife] only left twice – once to eat and once to get a doctor due to the retained placenta and let me know both times and asked with dinner if I was OK if she left for 15 minutes. (072)

She was there for my entire 17.5 hours of established labour, poor lady! (117)

When a mother's care was passed on to a medical team she was relieved and very satisfied if her midwife remained to offer her that feeling of continuity of care:

My midwife turning up and helping when she was no longer my lead during the birth (as it was just under 35 weeks). (036)

Other mothers did not experience continuity of care from either their midwives or medical personnel. This caused negative emotions including distress, disappointment, anger, and confusion resulting in dissatisfaction with their experience:

[...] doctors changed often. They all had different opinions. (167)

[...] as she [midwife] was busy I didn't get much time with her. (149)

My normal midwife was fine but the ones at hospital were not good (changed people a lot). (168)

I'm very angry that my care had no continuity. (077)

11.8. Theme 3: Feeling safe physically and psychologically

The third and final theme, *feeling safe physically and psychologically*, for both mother and baby throughout childbirth and in those first hours of the new baby's life, was desired by all mothers. They had made their preparations to ensure this was the case:

[...] healthy baby and safe delivery for both of us – it's all we could ask for. (017)

Staff were very professional and caring, I felt safe throughout the whole process (060)

However, when the mother perceived anxiety about the safety of her baby or herself, for example, baby had complications or mother suffered some sort of injury, the experience was not reported as satisfying:

[...] due to baby's breathing problems and spending time in the NICU, I felt like my birth experience was traumatic, and small things like skin to skin and a shortly-after-birth photo not being taken made my experience upsetting. (019)

Obviously there will always be tensions between what is best for the patient (staff with as much experience as possible) and the realities of needing to train new staff, and some patients will then have to suffer. I'm just sad I was one of those!¹ (146)

11.9. Subthemes of feeling safe physically and psychologically:

11.9.1. Professionalism (including obstetricians, anesthetists, registrars, hospital midwives and nurses, and any other staff forming part of the care team)

That carers, including midwives and hospital staff, were perceived as professional, that is, knowledgeable and highly skilled, was fundamental to the mother feeling safe for both herself and her baby. Mothers who were satisfied that their midwives demonstrated their professionalism made comments such as:

Both midwife's were extremely competent (053)

[...] quickness of midwife to realise issue during labour and to act asap (154)

Due to ability and competence she [midwife] was able to assess emergency situation requiring transfer to [...] hospital immediately (148)

[Midwives] made decisions quickly, and although prepared for a c-section were able to see that the baby had dropped enough for a ventouse delivery which was our preferred choice (153)

But not all mothers felt their midwives demonstrated an acceptable level of professionalism in all areas of their care. Consequently, they were uncomfortable with her treatment and their sense of safety was diminished. This was especially so when a midwife delayed bringing in medical staff because of her own wish for her client to deliver naturally. These concerns and the mothers' dissatisfaction were reflected in comments such as:

The doctors were great but only called in [by midwife] during last hour of delivery. Labour was 40 hours ... midwives determination to deliver the baby when no progress had been made after 4 hours of pushing² (172)

[I was] happy I went almost whole way without pain relief but not happy that midwife didn't

¹ episiotomy poorly done, required ongoing treatment

² large haematoma on baby's head, baby had temperature, was coughing up blood and distressed

pick up he was breech. She did not do any examinations during labour which I feel was weird. (182)

[I was dissatisfied with] process from midwife, lack of explanation, support, warnings (027)

I am not impressed that I may have to go back to have the stitching fixed up. [episiotomy and stitching done by midwife] (160)

The professionalism of hospital medical staff also impacted on the mother's degree of satisfaction with her birth. This was particularly true because, in most instances, there was some sort of complication that had necessitated the midwife handing over care to a medical team. At this point mothers were already anxious. They felt the safety of their babies and themselves rested on the expertise of the people who were taking over their care. When the medical staff demonstrated their professionalism, mothers were reassured they were in safe hands and this increased their satisfaction with their experiences:

I felt reassured by the knowledge and confidence displayed by the medical staff. (004)

Because of the great surgical team lead by [...] I felt less anxious and more at ease. (059)

A couple of hours after labour I started clotting as my uterus would not contract back down and I had about 10 doctors tending to me immediately, it was amazing. (124)

[I was impressed by the] speed at which medical staff got baby [real emergency c-section – no time to scrub in] (177)

When the medical team and the midwife worked well together their comfort and sense of safety was increased. This enhanced their satisfaction:

Midwife and specialist have worked together for a long time – felt totally comfortable with them and the actions they took. (002)

[There was] good relationships between midwife and medical staff (083)

When mothers felt that some aspect of their care did not demonstrate the professionalism expected, they felt their baby's and their own safety could be compromised. They expressed dissatisfaction with their experience:

Eight attempts for 2 lures³, 5 without pain relief. Arm almost developed compartment syndrome⁴ – no one noticed, even when I pointed it out (077)

[There was] mucus in baby's lungs – difficulty feeding and him throwing up and choking on it throughout the night – alone with a choking baby spewing his colostrum. (030)

³ the participant is referring to attempts to insert needles for tubing attached to a drip required to administer hydration, medication and pain relief

⁴ limb and life threatening condition occurring after an injury, resulting from insufficient blood supply to muscles and nerves

As a health professional myself I can with confidence say that there were issues around informed consent! Long lasting Painful complication that was probably avoidable; inability to fully trust that all medical care recommended/given is fully evidence based (146)

Nursing/caregiver of post birth were slack. I got left with baby on me in just a nappy for almost 3 hours. I couldn't get out of bed due to epidural and catheter. I rang the bell and they said no one could help me now due to shift change over. (023)

11.9.2. Control of self during labour and delivery

Mothers wanted to feel that they were in control of their own behaviour during their labours and delivery. Feeling in control added to their sense of safety. It also enhanced their pride in themselves by giving them a sense of empowerment:

I would like to say I was very calm during labour and the delivery. I had the support of my husband and parents at home. I tried to remain calm, relax and breathe with every contraction. When in the hospital, I had my husband and my midwife. I trusted and relied on my midwife's instructions on what to do. To my husband's surprise, I stayed very calm all the way, didn't even scream, yell or swear. I felt in peace, focused on what my body was telling me and breathing. (058)

I think given the circumstances I controlled my actions well and did what was necessary to deliver our baby (066)

During contractions I couldn't discuss with attendees as I was inwardly focussing. However, as soon as contraction lifted I was of sound mind and was active and able to discuss ... totally my choice to do/be/have what I wanted during delivery (176)

11.9.3. Control of decision making

When complications gave the control of the delivery to the medical team, mothers wanted to have some control in making decisions as to what interventions would be necessary. If mothers were unable to take part in this decision-making process, they wanted their trusted support people to stand in for them. When midwives and medical professionals encouraged this, mothers expressed themselves as satisfied because they felt involved. This involvement gave them a sense that they had regained some of the control they had lost, or had passed it on to someone they trusted. This enabled them to feel a sense of safety:

Despite the difficulties of the stop/start labour and the level of intervention required, I felt very involved and in control of decisions made during the labour. (042)

[I was] not forced to make hasty decisions (013)

I chose to not attempt the induction as my obstetrician advised me that there was such a high

risk of emergency c section because of where his head was, his size and the PGP⁵ so I chose to be in control. (071)

Mothers were dissatisfied when medical staff failed to include them in decision making:

I was 'told' I was being moved to delivery and would be given an epidural and AMR⁶ (077)

11.9.4. Interventions

No mother wanted an intervention. The necessity of an intervention added to the sense of risk mothers felt that birthing a baby entailed. Those mothers who laboured and gave birth without interventions were very satisfied with their experience. They were grateful that they had experienced no problems and, with baby, had come safely through childbirth. Other mothers who did have interventions were also satisfied if they understood the necessity for the intervention and felt that they were in safe hands. If they felt medical staff had been sensitive to their situation and themselves, as well as ensuring their safety, their satisfaction was enhanced. They were also very grateful when baby was delivered safely:

[I am] very thankful for my experience. Feel blessed to have had Baby at home, with no intervention, with a short labour, and no problems (175)

Never would have thought I'd have a great c-section experience, it was amazing. The one thing I feared was a c section. I was adamant I wasn't having one, but now I know it was the right thing for me at the time, and the staff, everyone made it so much nicer (071)

Others found having an intervention disappointing and even traumatic. It was difficult and frightening for a mother to find that her body would not perform as expected. This, combined with lack of understanding from the medical staff and poor sharing of information, added to her unease and sense of helplessness. This resulted in mothers sharing their disappointment and dissatisfaction with comments such as:

Disappointment at not having a natural birth, not seeing my baby afterwards, feeling I was unable to change the outcome (140)

Being induced when I thought my body would do it naturally (036)

[I was] not allowed to try natural vaginal birth; not enough information on reasons for c-section (079)

The intervention I received and lack of care/support from specialists completely override my whole experience. (095)

⁵ Pain at the back of the pelvis is known as pelvic girdle pain

⁶ Artificial rupture of the membranes

11.9.5. Hospital facilities

Many of the mothers elected to give birth in a hospital environment while others were admitted due to complications. Mothers commented that hospitals had some policies and resource issues which impacted negatively on them. Feeling they could not go to the hospital when they chose, equipment that caused them discomfort, and lack of appropriate resources detracted from their sense of being cared for in a safe manner. Comments that hospital policy around labour and delivery and available medical resources were perceived as inappropriate included:

Hospital rules that state that a woman has to be dilated to a point before going in. I was in pain but I waited 9 hours before coming in. (109)

[I] was in stirrups for over 5 hours. Broken stirrup on left side. Very uncomfortable and felt the effects for a few days. (128)

[I was] not offered a wheelchair to leave hospital 8 hours after labour with epidural (138)

There was a delay in going to the birthing suite as there were no rooms available, I almost ended up having to have pethidine because of the delay. (031)

Signing consent forms while in shock and pain and stress ... and only allowed one person in caesarean operation room (but so glad was allowed someone) (118)

Mothers also had issues about the provision of, and the policies surrounding, accommodation provided by hospitals. Safety also included a sense of psychological and emotional safety. While important throughout the process of childbirth, before the birth mothers were more focused on physical safety. After the birth of the baby, physical safety remained an issue, but mothers were also better able to focus on issues of psychological and emotional safety. Mothers wanted the space to be comfortable bonding with their babies, and, with fathers present, bonding as a family. The father was considered by the mother to be an essential part of the bonding process. Many mothers commented that they felt they could not have gone through childbirth without their partners present, and to have him sent home after a birth at night, because the mother was expected to share accommodation with other mothers, was both distressing and worrying for mothers. At a time the family should have been bonding, the mother and her baby were separated from her partner and the baby's father, and she was left to worry about the impact being sent home was having on her partner. When hospital policy made the new family staying together difficult, or even impossible, mothers expressed their disappointment, dissatisfaction and in some cases distress:

Just sharing a room post-delivery. It was the worst part of it all. New Mothers, in fact NO

mother, should have to share a room with another mother. (090)

The only thing I wasn't terribly happy with was being moved from my own room to the ward after the first night. (098)

It would have been great to have a single room in the maternity ward post birthing. (045)

Not being able to bond in privacy. (118)

[My] partner made to leave (167)

Another hospital policy which had a negative impact on some mothers was the encouragement to leave as soon as possible. Not all mothers felt ready or safe to leave as soon as expected. When mothers knew they were not being pushed to go home before they felt capable, they expressed their satisfaction:

[I was] not being asked to leave ... hospital too early (120)

11.9.6. Healthy baby/healthy mum

Every mother wanted to give birth to a healthy and happy baby. Mothers wanted baby to have a perfect or near perfect Apgar score immediately after birth and to have all his/her fingers and toes. The new mother wanted to hold her baby right away, have skin on skin contact right away, and most new mothers wanted baby to breastfeed shortly after birth. When these expectations, or hopes, were fulfilled, the mother was filled with a sense of emotional wellbeing and satisfaction:

Red, wrinkly, covered in goo but healthy and gorgeous! (139)

Apgar at 1 and 5 minutes were both 10 (016)

[My] baby was placed on me immediately and lay on me until the cord stopped pulsing and was cut (072)

I was the one to lift her up and hold her first! For ages! The midwives wouldn't even let me take a shower right away, they said what I needed was skin to skin with my baby and that that would stop me shivering faster than any shower would, and it did - hormonal - unbelievable! So yes very good indeed, they were all for me holding her skin to skin as much as possible, and when I did have my shower, it was Dad skin to skin time (062)

She fed as soon as she got over the shock of being out! We snuggled in bed and she latched within 20 minutes (048)

Not all mothers had an uncomplicated delivery or empathic care. For some mothers, complications made immediate physical contact difficult, or medical staff were not sensitive to her need for this immediate contact. These mothers expressed their disappointment, dissatisfaction, and distress:

It was 4-5 hours before I was out of recovery and wheeled up to neonatal to see and hold him (069)

As she ended up in the NICU I had to wait for 45mins just to see her and about 6 hours till I got to hold her. I understand why but feel that I missed out on an important part of giving birth (053)

I was left for 75 minutes waiting to be sutured and was very upset that I didn't get the opportunity to have the first skin to skin with my baby. (095)

[I] didn't see him born, was taken to a table out of my sight to be checked over. Felt like I was waiting for ages before he was brought back for skin to skin. (167)

[My] baby was on an IV drip and therefore not hungry. It took a while for a successful breastfeed as he kept falling asleep (024)

I can't help thinking that because my experience was so traumatic this may have hindered my ability to breastfeed. (160)

When a mother who had other negative experiences during her childbirth experience, particularly psychological anxieties due to unexpected interventions, also had positive experiences during and after a difficult birth, the impact of unexpected disappointments could be reduced. When midwives and medical staff endeavoured to give the mother this first contact with her newly born baby, her disappointment and concern for her baby were moderated, and she experienced greater satisfaction than those mothers who were not given this opportunity:

supportive staff and doctor ... waited to see if I could push him with help before rushing me into theatre for c-section ... held my baby straight away (086)

[I] wasn't expecting to hold him because we knew he'd be taken to NICU but got a 20 second cuddle about 5 mins after his birth (125)

I was able to hold her pretty much straight away and continued to hold her throughout the 2 hours it took to stitch me up and stop the bleeding etc. I then fed her and she only left my arms to have skin to skin time with her dad. (179)

We had 45 minutes skin to skin straight after birth before they took her to SCBU. (190)

My midwife insisted on being let into the recovery room where I was so baby could have his first feed (1.5 hours after delivery). The hospital staff weren't happy with this though. So I'm glad she insisted. (020)

I was able to feed my baby in recovery with the help of the staff there and the baby lying next to me. (020)

Not all mothers were ready to breastfeed baby soon after birth. If these mothers were

not cared for with sensitivity, their first efforts at feeding their babies were both distressing and off putting. Even though baby had been born, the mother was still feeling vulnerable. Suddenly this new life was a reality and she had the responsibility for his/her wellbeing. She needed reassurance that baby would be safe in her care, that she had the skills to ensure this. It took some mothers time to adjust to these new responsibilities and when carers showed a lack of empathy for the mother's situation, she expressed her dissatisfaction. In some cases, such lack of concern for the mother's emotional wellbeing caused her to decide not to breastfeed:

[Baby] got thrust upon me by incompetent midwife. U must latch ur baby now. That's why [I] didn't breastfeed. Felt very demanded that I do it now and baby wasn't even 30min old⁷ (111)

A lot of pressure from the midwives to latch early, resulted in a lot of unnecessary trauma to me and my nipples which were completely ripped after they told me to use nipple shields in the first 24 hours after delivery. Very bad idea, and resulted in a delay of breast feeding by several days while my nipples healed. I cried a lot over this at the time and felt I would never be able to feed my child. If I hadn't been pressured into early latching when my baby was still basically asleep after hours in labour and a section, this could have been avoided. (122)

11.10. Summary

To experience satisfaction with childbirth a mother felt well enough informed to make choices about who would support her, care for her, what type of environment she would birth in, and the types of pain management strategies she would use. Putting her hopes for herself and her baby into a birth plan gave her direction and awareness of her personal expectations. A mother expressed satisfaction with her labour and birth experience when supporters and carers fulfilled their roles as she expected, when her environment was as she planned, when the pain was manageable, however she chose to manage it, and when her expectations for the labour and birth were met.

The support and care she received, and the empathy, patience and encouragement she received from her supporters, and the professional care and empathy she received from her carers, affected her experience considerably. She wanted known and trusted supporters and carers who were non-judgmental, sensitive to and aware of her needs, and were prepared to put her needs above their own ideologies. She needed good communication between herself and all concerned parties as well as good communication between her carers and supporters,

⁷ this mother had just had a c-section without her partner's support, as the midwife failed to call him when asked, as had previously been agreed

and between midwives and medical personnel. Above all she needed to feel that she was being kept informed when her labour and/or delivery were not going to plan so that she could be a part of the decision-making process. If she was unable to comprehend what was happening, she needed to know that someone she trusted was kept informed and a part of the decision-making on her behalf. She also felt the need for continuity of care. If complications meant that unfamiliar people had to take over her care she felt the strangeness was moderated if they took a few moments to introduce themselves. She was reassured if her midwife remained to support and inform her. When these conditions were met the mother expressed her satisfaction with her birth experience.

All mothers wanted their babies to be safely delivered and themselves to survive childbirth. They relied on the skills and expertise of their midwives and, when needed, other medical professionals, to keep themselves and their babies safe. They also felt better about their experience when they felt they had personal control over their bodies, especially their ability to manage the pain of labour. This also contributed towards a sense of safety. No mother wanted to experience interventions but when necessary if they understood why it was necessary for the safety of themselves and/or their babies, they managed their distress. When medical staff showed consideration and empathy and treated the mother as an individual rather than just another a patient, mothers undergoing an intervention could even feel empowered by the experience.

Not all mothers elected to give birth in a hospital but those who did, and those admitted after complications set in, felt the need for sufficient medical and accommodation resources. They did not want to have to wait for a delivery room to become available when they were ready to push nor did they expect to endure broken or faulty equipment or procedures. Such experiences did not make them feel they were getting safe care. They also did not want their experiences compromised by hospital protocols they regarded as unreasonable. While physical safety was a priority before the birth, after the birth mothers were more focused on psychological and emotional safety. Accommodation issues at hospitals were a concern to mothers, especially to those giving birth at night. The unavailability of private rooms, which necessitated their partners leaving soon after the birth, was considered most unsatisfactory and very distressing for some.

The birth of a healthy and happy baby was both a relief from the anxiety that something could go wrong and a source of joy and satisfaction for mothers. Being able to hold her baby right away, to have immediate skin to skin contact reinforced that baby had arrived safely and that she had survived childbirth. Having sensitive staff to assist her to develop her breastfeeding skills, based on her personal readiness and needs, added to the mother's sense of safe passage into motherhood. These were sources of satisfaction for the mother.

Each of the prerequisites described above enhanced the mother's experience of the birth of her first child. Each one that was unmet lessened her satisfaction with her experience. For most mothers, childbirth was a varying mix of prerequisites met and those unmet. However, when a mother considered all the above prerequisites had been met, the mother considered her childbirth experience to be an amazing and perfect experience:

Had a water birth which was amazing ...the water birth was perfect (078)

It was perfect [Just like I expected it to be] (106)

It really bloody hurt but it was so satisfying and amazing it didn't matter (138)

My whole experience was amazing [...] Truly a life changing experience for both of us, him witnessing his daughter being born, and me birthing her (176)

Having such support from my midwife. A calm supportive partner and having such a fast drug free drama free birth in pool. All compounded to a pretty amazing childbirth!! (152)

The following chapter presents the father's story.

Chapter 12 – Results – The fathers' story

12.1. Chapter overview

This chapter gives the results of the analysis of the data provided by the father as he commented to clarify his experiences during the mother's labour and delivery of his child. While fathers hoped that the mothers would have uncomplicated deliveries, they were aware that things could go wrong:

A healthy baby was delivered naturally which was our aim at the outset, but not always achievable (160)

The mother's childbirth was a time of excitement for the father who was affected by various concerns for the wellbeing of both her and their baby. For him too, it was a life changing experience:

It was a life changing situation for us both, the witnessing of a miracle (139)

This experience had the capacity to bring couples closer together and strengthen relationships:

Difficult journey but overall helped me appreciate and love my wife more for it. (034)

Our relationship is much stronger for having survived the experience (053)

The following examines the New Zealand father's perception of his childbirth experience. It provides more evidence about the importance of the role of first-time fathers.

12.2. Results: The father's story

This analysis examined the experiences and the impact of these experiences on 155 fathers from the onset of labour until the early hours after the birth of the baby. The fathers in this study were all able to well articulate their experiences. Their experiences were diverse and unique, from the fathers who described their experience of the birth of their children as very satisfying due to:

Partner's control of the entire process; No medication; Support person; Confidence in our Midwife; Support from my parents later that night, bringing food. Text book home birth. No drugs, just support from myself and a friend of ours. Midwives had all the medical checks in order towards the end. Great experience. (157)

[...] great midwife (who wasn't our regular but a backup); good quality facilities; high general standard of care; felt listened to by midwife and that she acted on (and in) our interests; being

well prepared ourselves, and the items we brought along plus psychological preparedness; felt listened to by medical staff [though felt they did what they wanted]; anaesthetist was great; theatre staff were great (024)

to the partners who described their experience of the birth of their children as very dissatisfying due to:

[...] long labour, persistence by midwife to allow normal delivery to continue when my wife was screaming "I can't do this" for over 4 hours and then had to wait for 1 hour until an anaesthetist was found [for c-section]; dissatisfied by the comment "Oh it must be a male, that's why it's taking so long"; dissatisfied I was virtually ignored by midwife/student; dissatisfied my wife barely acknowledged me – may as well not have been there... sudden change of plan from vaginal to [caesarean] delivery. Long tortuous walk from delivery room to operating theatre... Don't think I will be present for any future children's birth. (005)

[...] midwifery system (our understanding is that lump sum payments are made for the 3 stages of birth (pre, post and natural birth) and if this is the case, it makes sense that the midwife was incentivised by the money of a natural birth even when it was not in mother's or baby's best interests at the time; hospital midwives would not deliver pre-charted pain relief after requesting it over and over; our midwife's attitude especially once the need for c-section was ascertained by doctors; our midwife's lack of attention for detail, eg misplacing files, writing down incorrect readings etc; length of labour (40 hours) and the amount of medical intervention when a natural birth was our preference (172)

12.3. Outline of the themes extracted

Four major themes emerged that communicated the father's perceptions of the birth experience of his first child and explained his consequent level of satisfaction or dissatisfaction with these experiences. These were:

1. *Safety of mother and baby*
2. *Understanding his support role*
3. *Mother in control and managing pain*
4. *Care and communication during and after birth*

Encapsulated in each major there were a number of subthemes.

Table 12.1

Outline of the major themes with their subthemes showing influences on first-time father's birth satisfaction.

Major Themes	<i>Safety of mother and baby</i>	<i>Understanding his support role</i>	<i>Mother in control and managing pain</i>	<i>Care and communication during and after birth</i>
Subthemes	<ul style="list-style-type: none"> ● <i>Safety as a priority</i> ● <i>Healthy mother and baby</i> ● <i>Staff professionalism</i> ● <i>Birth environment – home or hospital</i> 	<ul style="list-style-type: none"> ● <i>Support role understood</i> ● <i>Team work with mother and professionals (included and involved)</i> ● <i>Making a difference</i> 	<ul style="list-style-type: none"> ● <i>Mother seemed to be in control of birth process</i> ● <i>Issues with pain</i> 	<ul style="list-style-type: none"> ● <i>Complications and interventions</i> ● <i>Communication</i> ● <i>Bonding</i>

As all themes are related to the concept of birth satisfaction, there is some overlap as some subthemes are analyzed from different perspectives (i.e. professionalism and birth environment; teamwork and bonding).

12.4. Theme 1: *Safety of mother and baby*

All fathers wanted a healthy outcome for both the mothers and babies:

Little one and partner were healthy in the end, so it was a win. (042)

But fathers understood there were risks involved in childbirth, no matter how carefully they had managed the pregnancy:

After a trouble free pregnancy using all sorts of natural techniques and healthy lifestyle choices we were hoping for an unassisted labour to occur naturally. Unfortunately it wasn't to be, and almost all medical interventions were necessary to safely deliver baby (172)

Had expected a home birth, then a hospital delivery, then after 'lots' of inducement we had the c-section (049)

Consequently, fathers wished to ensure that the mothers were getting the best care available. This involved care given by the LMC and other medical professionals (obstetricians, registrars, anaesthetists, nurses, and hospital midwives most commonly mentioned) and the perceived safety of the environment in which the birth was planned to take place; that is, mothers were giving birth in what the partner perceived to be a safe and controlled environment. When these conditions were met, the father expressed his satisfaction:

Very happy that she was healthy...Happiest moment ever. (187)

12.5. Subthemes of *safety of mother and baby*

12.5.1. *Safety as a priority*

Fathers were aware that complications during labour and birth could, and did, arise and that these, in some instances, could have fatal consequences for mother or baby or both. They expressed caution and concern:

[...] my wife's and baby's health was always a priority (136)

I tried not to have too much of a plan for the labour as I have seen the best laid plans go out the window. My plan was to ensure mum and baby were kept as safe and comfortable as possible during the process (099)

Our birth plan was for a water birth and minimal intervention and medication. However we were prepared for this to change as is usually the case and as they did! (181)

Underlying the joy at a good outcome was the relief felt that mother and baby had come through safely as reflected in the following comments:

[the mother] survived the experience... was not how we planned but mum and baby alive and [...] partner did not die! (162)

[...] mother and baby both made it through alive and well (047)

12.5.2. *Healthy mother and baby*

Fathers were concerned both for a healthy baby and that the mother came through unscathed and in good health. When either mother or baby suffered health complications the

father was alarmed and apprehensive and his satisfaction was inhibited:

Didn't enjoy it at all. Lots of worry about her and the baby...seeing the baby pretty dormant when she came out (066)

She wasn't good - an APGAR of 3. (042)

[I was] very dissatisfied as we had quite a wee shock when he came out, firstly he had his cord all wrapped around him and then he stopped breathing after he came out. (043)

[Our] baby wasn't breathing at first so was taken away from us to be worked on, staff were slow to update us but all very efficiently doing their jobs, the most harrowing wait of my life (053)

A healthy baby and a healthy mother was all the father could ask for. He expressed his satisfaction:

She got a 10 for her apgar and had a great set of lungs! (181)

I ended up with a healthy wife and son (152)

[...] full term baby, healthy, successfully delivered. Wife healthy – just (005)

12.5.3. Staff professionalism and support

Fathers perceived staff professionalism when individuals demonstrated a high knowledge base, a high level of skills, and the competence to use these appropriately for each individual circumstance. Fathers also felt greater confidence in the professionalism of midwives and medical staff when they worked well together as a team, when they were prepared to call in someone more knowledgeable if the situation warranted, and if they communicated well. Such professionalism enhanced the father's belief that the mother and birthing baby were in good hands and receiving a high standard of care. If the father also felt that their (mother and father) humanity was respected his satisfaction with the experience, whatever the mode of birth, was enhanced. He made such comments as:

Dedicated midwife; Special mention to the sound reaction by the obstetrician once the baby's heart rate started increasing. I was very impressed by how well managed the c-section was [...] and how well we were looked after (122)

Anaesthetist was fantastic - explained everything & recapped immediately before it happened. Anaesthetist, surgeon, midwife, SCBU all worked like a well-oiled machine. (029)

I was very impressed with our midwife as she had been involved in a birth prior to ours and I'm sure was feeling tired from that. She stayed on right through our labour and stayed composed, alert and left me feeling confident that she was doing a great job. (099)

Excellent. Our experience ended up being very "medical", however everyone - including the anaesthetist and registrar - were very personable and relaxed. Despite all the gowns and masks, they treated us like people (042)

She [midwife] was caring and professional. When there was a concern about the labour process she happily deferred to a much younger, but wholly capable obstetrician (060)

Not all fathers felt their carers demonstrated professional behaviours and this left them distressed and concerned for the wellbeing of their loved ones. Consequently, they were dissatisfied with this aspect of their experience of the birth of their babies and expressed their concerns accordingly:

The midwife put her own interests first, didn't provide the care we expected, and when the doctors told us (after pushing for four hours) that baby was '-2', she continued to make my partner push again in an attempt to prove them wrong. Once baby was born the midwife was angry and was most interested in getting home. (172)

[...] lady doing epidural didn't seem sure of what she was doing which made me very uneasy (093)

[...] doctor made us feel like we were an inconvenience as she was about to go into surgery. (023)

Hospital staff were terrible, unhelpful, left us feeling very alone and unsure of what to do. (128)

Such experiences contributed to fathers commenting:

No hurry to go through it again. (066)

I'm not keen to repeat it. (186)

12.5.4. Birth environment – home or hospital

Fathers wanted to be confident that the mothers were giving birth in what the father perceived to be a safe and controlled environment. How safe the environment was perceived to be was, in part, a reflection of the competence of the carers engaged in the care of mother and birthing baby. But it also reflected what the father perceived as a comfortable environment which enhanced the mother's, and his own, ability to take in and adjust to this life changing event. The choices included homebirth or institutional birth (including midwife run birthing suites and hospital).

With a home birth the father needed to feel confident in the midwife who would be attending, that she understood their requirements, and was competent to recognise and deal with any complications which may have arisen. When he was confident the midwife would ensure their needs were safely met, he expressed his satisfaction:

I was confident in our midwife (088)

[...] home birth; the environment; the people [including midwife and supporters]; utilities (176)

Other than the actual birth, she only came in every half an hour or so to check on the baby's heart rate. Other than that she left us to it, which was what we wanted (092)

Those fathers who experienced an uncomplicated homebirth described it as satisfying:

[...] the serenity of home. It made the entire experience -> calm [...] after I had the opportunity to take it all in, in the place I am most comfortable [...] As an American we are not really exposed to home birth and midwife concept. After such a positive and beautiful experience I'm now a huge champion for home births (088)

Text book home birth... Great experience. (157)

[I] couldn't imagine how different it would have been in hospital (046)

Not all planned homebirths proceeded without complications and, consequently, the mothers needed care that could only be provided in a hospital environment. In this situation fathers were grateful that such a facility was available to them. Despite the disappointment of not having a homebirth, fathers expressed satisfaction when the mother received a high standard of care from the professionals involved with comments such as:

[...] because of the surgery there were 3 midwives as well as 1/2 a dozen other medical staff [...] the attitude of staff; the competence of staff; being in hospital (049)

Good support from midwife; knowledgeable; competent team of midwives, RN and Dr's (096)

Many couples elected to give birth in hospital or midwife run birthing suite after labouring for a time at home. This was seen as the safe option because medical personnel were on call and facilities were available if complications eventuated. One father expressed very clearly the effect being so close to the hospital facilities had for fathers wanting to ensure the care the mothers needed would be quickly available in an emergency:

Hospital setting made it easier to relax (045)

Fathers who perceived that the mothers had been given a high standard of care in an appropriate facility expressed their satisfaction with comments such as:

Excellent Midwife; Excellent care and attention by hospital staff (094)

The professionalism of the Theatre staff and how well we were looked after; Great birthing suites at [name] hospital added up to be a great combination. (122)

Good facilities – cleanliness (130)

It seemed like everyone was very competent, not rushed or short-staffed; good facilities (156)

12.6. Theme 2: *Understanding his support role*

Fathers wanted to feel included and involved in the mother's labour, especially if complications occurred and plans had to change with new decisions, often unexpected, to be quickly made. Those who felt included and involved expressed their satisfaction with:

Being involved; close to my wife (046)

Not only was midwife looking after the needs of my wife, she also ensured I was looked after i.e. fed, watered, rested. (034)

while those fathers who felt excluded were dissatisfied and felt their experience of the birth of their child had been compromised:

I asked my partner if she had asked the midwife to call me of which she stated that she had asked the midwife many times to call me and she always had an excuse to not do so [...] The midwife totally destroyed the experience for both of us. (111)

[Midwife had a] sexist attitude, anti-male (005)

12.7. Subthemes of *understanding his support role*

12.7.1. *Support role understood*

Some fathers established their own role in the mother's labour and delivery of their child, and prepared themselves accordingly. Others simply found themselves responding positively to the labour and birth. Both reported greater satisfaction with comments such as:

[My role] was to make her feel supported and loved [...] to be accepting of whatever she was feeling, reassure that they were normal, and remind her that she was doing a great job (042)

It was long and partner lost focus and was very depressed, but then I could help her focus and continue trying different things (107)

I didn't want to be very involved beforehand, but when it all started, it was just me in there with the midwife, so I ended up getting a lot more involved than I had wanted to, but it was great, I felt that I could help my partner more and aid the midwife as well [...] I would now urge any fathers to be to get involved, get hands on and witness the birth of your child. (043)

than those fathers who found themselves wanting to have a role to play, but who had no idea what it was, and consequently were left feeling helpless:

[I] didn't really know what to say or do, bit stunned (185)

Not being able to help was frustrating (104)

Feeling a little inadequate or helpless sometimes, especially considering I'd never been to a birth

before (061)

12.7.2. Teamwork with mother and professionals (included and involved)

Those fathers who felt themselves included and involved commented on the sense of teamwork they experienced working with the mother to assist her to give birth to their child. This sense of teamwork began the family bonding process:

We worked well together (060)

Wonderful feeling of teamwork and bonding between us (051)

Despite painful journey for wife, felt strong bonding session between wife and myself through that journey, and appreciated the difficulty of the labour. Allowed strong bonding as well between son and myself. (034)

When the midwife and other medical professionals facilitated the father's attempts to support and encourage the mother, he felt a greater sense of satisfaction, even when he had not initially known what his role was. Those who received advice and guidance from their professional felt they were better supporters:

The doctors and midwives engaged my wife and I constantly and I felt I had good inclusion in the decision making. I felt I was playing a part in the process which helped remove any feelings of being a third wheel in it all (038)

I was at her side so medical people made sure I was able to be seated right by her head when they operated (065)

Midwife guided me with regards to ways of supporting wife's body and breathing techniques (034)

She [midwife] encouraged me and advised where the best place to be was in each situation, and really encouraged me to be part of it. (152)

12.7.3. Making a difference

When the father felt confident that he had made a difference by offering his support and encouragement to the mother he was filled with a sense of satisfaction with both himself and his overall experience of the birth of his child:

I felt I was helping [...] my wife said she really appreciated my support throughout and I made a difference for her (038)

I kept it together and didn't get emotional, so was able to control my actions and help partner focus on what she needed to do. I got her to copy my breathing to help her focus. (181)

Tried to be a practical and supportive as possible, and I think I achieved that. (066)

12.8. Theme 3: *Mother in control and managing pain*

When the father perceived the mother to be coping, his anxiety was reduced and he felt less distress. This carried through to situations where medical interventions became essential. If the father perceived her to be handling the situation, his sense of satisfaction with the birthing process was enhanced, as was his admiration for the mother and he commented on:

How well my wife coped with the whole experience (093)

[The] ability of partner to cope with the birth (131)

[His pride in] how well she coped throughout. Although she was clearly in a lot of pain she made it through by focusing on herself and was able to still make good decisions and was open to assistance from myself and the midwives (038)

12.9. Subthemes of *mother in control and managing pain*

12.9.1. *Mother seemed to be in control of birth process*

Fathers were sensitive to the way mothers managed their birthing process. If the mother was perceived as being in control of her birth process, that is, what was happening in her body as well as any decision making required, the father felt greater satisfaction with his experience of her labour and birth. The mother's personal control reinforced his perception that all was going well. He felt pride in her achievement including:

The ease with which [mother's name] managed labour and birth; the strength of character that she showed (092)

The way my wife handled herself was second to none. I was so proud of her. She could not have done any better. (103)

Partner's control of the entire process (157)

12.9.2. *Issues with pain*

The father felt a sense of relief when the mother was able to manage the pain using the strategies she had selected. When she did not become overwhelmed and distressed, his satisfaction was enhanced because:

Partner did very well managing her pain as much as she could (005)

My wife's use of breathing techniques to get through the labour; my wife only needing the gas for pain relief. (074)

No drugs, just support from myself and a friend of ours. (157)

Fathers found it difficult seeing the mothers in pain, especially when over a prolonged period. Feeling helpless, that there was nothing they could do to relieve that pain, decreased their satisfaction with the experience of childbirth:

Probably one of the most harrowing experiences of my life to see and hear someone I love in that much pain and to be so helpless to do anything about it. (053)

You can't help but feel that you are helpless given the internal nature of the pain. Seeing a loved one in pain is not something that is easy to watch especially knowing that you can do only so much (152)

It was the length of intensive pain for her that was the worst, caused by the artificially induced contractions, for a full 24 hours with very little assistance from hospital staff and with midwife absent (172)

The father felt happier when she managed to give an impression that she was not experiencing too much pain, or when she was given medication, such as an epidural, to make the pain more tolerable:

Partner had a serene and peaceful expression on her face throughout – it was quite amazing and she had to keep reminding both myself and the midwife that she was really in quite some intense pain! Due to this, it was much easier than expected (I really don't usually handle seeing partner in pain very well) (024)

One of the perks of having an epidural is not having to see your partner in pain. Despite wanting minimal medication, the epidural was unplanned, it was awesome and nice that my partner had no pain throughout the labour. (181)

12.10. Theme 4: Care and communication during and after birth

In the early hours after the birth, the father's level of satisfaction with his childbirth experience was enhanced or inhibited by the empathy and communication he experienced from the professionals caring for his partner and baby. He wanted to see professionals understood the needs of each member of his new family and feel confident the mother and his child would continue to receive good care. When this was not his experience, he expressed dissatisfaction:

[...] partner was having trouble with getting help post birth. She had catheter in and still suffering from epidural and was uncomfortable in bed. Took 2 hours after ringing bell to get bag changed (023)

After the birth, medical staff forgot to show our baby to the mother. This was poor. (040)

12.11. Subthemes of *care and communication during and after birth*

12.11.1. *Complications and interventions*

Fathers hoped that the mother would experience a short labour which was not too painful and that the birth would be easy and without complications. For some fathers this was the case and it led them to make the following comments explaining why they experienced satisfaction:

It was a lot easier for her (and for me) than I expected (092)

[...] reasonably quick birth with a very healthy baby as a result (112)

My partner was cool, calm and collected; medical interventions were avoided; process went smoothly (061)

Fathers did not want their partners develop complications during labour and/or delivery which could affect either the mother's or baby's wellbeing, or the wellbeing of both. When unexpected complications did develop, fathers could find these scary and distressing. If the mother was distressed, then it became even harder for the father to cope and his satisfaction with the birth of his baby was diminished:

Was going well until intervention was needed, then was rushed and traumatic (177)

We did not expect a c-section, and were hoping to be epidural free too. The whole experience was horrific at the time. (040)

It was an Emergency C section [...] it was incredibly scary watching her be operated on and not know[ing] how things would turn out (116)

It was wrenching when the ventouse proved insufficient to turn the baby and a caesarian was required. (040)

[I felt] an emptiness, indescribable. [Mother] drugged up, unable to get baby out, on an operating theatre, awake for 25 hours, had to let the delivery occur in control of 13 people. (005)

The experience of going from feeling like a successful vaginal birth was on the cards [to] feeling like failures when the caesarian was decided, was awful (048)

How professional staff managed the situation affected how the fathers coped with the complications and interventions the mothers experienced. Both parents needed their distress and disappointment to be acknowledged by empathic treatment from the carers involved. They needed support, explanation, and reassurance, and to feel that their humanity was recognized by the medical team saving lives. When these needs were met, what initially was both frightening and a major disappointment had the potential to reduce the mother's distress and calm her which consequently increased the father's satisfaction with his birth experience:

[...] the medical staff [...] reassured me during the birth. [ventouse delivery] (104)

[Was a] successful outcome in the end; competent staff gave me confidence even when medical issues arose; midwives mostly friendly and conscientious [...] when needed doctors were fantastic and reassuring [ventouse delivery] (053)

[The] professionalism of doctors doing what they do best; made to feel at home in operating theatre (033)

Once they made the decision to make an emergency c-section the staff were fantastic and it went really well (123)

12.11.2. Communication

Keeping parents informed of how the birthing process was progressing was important for all couples but became particularly so when any complications occurred. In some instances, parents were not only uninformed but were excluded for the decision making process, or doctors pressed them to agree to decisions they were not altogether comfortable with. But it was more than this. Parents were also very sensitive to tone of voice and the opinions that were expressed. Partners were protective of mothers and were dissatisfied if they felt they were not being treated with empathy. Conflicting opinions aired in front of parents were also disturbing as were staff that did not communicate well with each other. Such experiences left fathers expressing their dissatisfaction with comments including:

You can really feel left out of decision making in hospital especially when things go wrong (053)

Once the specialists took over Partner and I were not included in any decisions (095)

[There was a] lack of 'connection' with medical staff (024)

Long labour; midwife could have used more diplomacy when partner was feeling down (106)

Couple of times we weren't told what was happening, such as the episiotomy (115)

3 groups were disagreeing/stressed (2 midwives, NICU, emergency team) (120)

The staff didn't seem to talk to each other and asked my partner the same questions over and over (018)

Other couples felt that they were kept well informed by midwives and other medical professionals and that they were able to understand what was happening and take part in decision making. If that was not possible because of an emergency situation, then they were appropriately debriefed afterwards. This empathic treatment enabled couples to feel they still owned the process, and while dependent on the skills of medical professionals, they could accept this and feel positive about their experience. Fathers expressed their satisfaction, even when the actual experience might have been difficult:

Really excellent version of informed consent (004)

Was in the loop all the way (184)

We were both well informed during each step and I felt our midwife and others provided information fast and clearly (099)

[There was] great communication by medical staff during the birth (040)

[There was] no time for consultation but talked to us after (177)

12.11.3. Bonding

Seeing baby finally arrive was a very special moment for both parents. Fathers found it an awesome experience:

Then finally seeing the baby come out when he was almost there was very amazing (043)

Seeing my baby for the first time and knowing what we have been waiting for (134)

Fathers expressed satisfaction with their part in the first moments of baby's life when they had the opportunity to cut the umbilical cord. They were also excited that they could finally hold their baby for the first time. However, fathers, while wanting a cuddle, were concerned that the mothers got the opportunity to hold baby and have skin on skin contact as soon as possible. When this was possible they were very satisfied and did not mind waiting to have their turn. Fathers wanted what they saw as best for mother and baby – that the separation would not be too abrupt. Comments such as the following conveyed this satisfaction:

He got loads of skin on skin with his mum which was lovely. (184)

Straight away on mums stomach and I was able to cut cord. (096)

[I] cut cord, midwife took her across room, gave her a clean and back to me to give to mum (090)

I wanted to ensure my wife got as much time as possible first (038)

When fathers assisted with delivery and/or got the opportunity to hold baby for the first time soon after delivery, it was a very special moment for them and they expressed their satisfaction with their experience with comments such as:

I got to catch him (055)

Delivered the baby which meant holding the baby during the delivery process so minimal delay in contact. (034)

[...] holding him so soon after delivery (158)

[I waited] 5 minutes then I got to have a hold and hand her over to her mum. (060)

Due to partner needing to be taken to theatre I was given Baby for skin to skin within 15 minutes of her being born and [I] cuddle[d] her for over 3 hours until partner was brought back. (181)

[I held baby] about 2 minutes after procedure [c-section] (017)

Circumstances meant that for some parents there were delays before either parent could get that first cuddle. While they tried to be philosophical about the delay, it was very difficult for both parents to wait even five minutes for that first precious physical contact. However, fathers were clearly troubled when the mother was unable to have immediate physical contact with their child. While not all fathers in this situation expressed outright dissatisfaction, they did at least express disappointment and concern:

[It was a] long, long time. Don't remember when I first saw partner holding baby (005)

Due to incubation I was okay not holding him but still would have liked to earlier if it wasn't so dangerous for him (120)

As baby was taken to NICU I did not get to hold the baby until later that night (166)

[We were] unable to see the baby for about 5 minutes, [the staff] could have given us updates (053)

[it] was quite hard having a little waiting time. They had to check her out (118)

With the birth of their baby, couples were transitioning into a family. Parents sharing childbirth, and those first moments of baby's life, was important for the early initiation of bonding. Fathers were very much a part of this:

The opportunity to partake in the delivery of the baby helped significantly, and in retrospect contributed vastly to the bonding process between myself and my son. (034)

Wonderful feeling of teamwork and bonding between us (051)

Fathers wanted the space and privacy to continue this bonding process. When hospital facilities were inadequate to support the continuation of this process, distress was caused. Fathers were unhappy if mothers were transferred soon after birth to wards that meant room sharing with other new mothers. This became especially difficult for them if the birth occurred in the middle of the night and they were told that they could not stay with their new family. For some fathers this left them disenchanted and disheartened. Fathers expressed their dissatisfaction because of:

[...] room sharing afterwards! (001)

[...] getting kicked out at 3am – very tired – almost drove off road few times (167)

The following father clearly expressed the emotional impact being separated from his new family so soon after the birth had on him:

[It] was heart breaking when they said I couldn't stay the night. I had been with her that whole

time and suddenly I had to go (027)

12.12. Summary

Above all the father wanted a healthy baby and a healthy mother after childbirth. To experience satisfaction with his experience of the birth of his baby, a father needed to feel confident that both the mother and the baby were safe at all stages of the labour, delivery, and the early hours of the baby's life. He expected that midwives and medical professionals would demonstrate the highest of professional standards while caring for his loved ones and that this would ensure their safety. Fathers varied in their choices of birth environment. Whether the mother was birthing at home amongst all that was familiar and where they both felt more control over conditions, or whether she was birthing in hospital closer to more sophisticated medical resources, considerations of safety and professional standards affected this decision.

The father also needed to understand his support role so that he was clear about what he could do to assist in his baby's birth. He wanted to be included and involved. It was discouraging to be present but feel helpless because he did not know what to do. Working as part of a team with the mother during her labour and delivery was satisfying and when the professionals encouraged and facilitated this teamwork he found his place. And importantly, to express satisfaction the father needed to feel that his support and caring had made a positive difference for the mother.

How the mother coped impacted on the father's perception of his childbirth experience. When he perceived her to be in control of the birth process and to be managing her pain, however she chose to manage it, his concern for her wellbeing was reduced, and he experienced greater satisfaction. Fathers found it difficult watching mothers in pain, particularly when they felt there was nothing they could do to alleviate the pain or help her manage it. For some fathers, it was a relief when the mothers were given epidurals.

Fathers wanted labour and delivery to progress without complications for the mothers. However, when complications did develop it was an anxious time for fathers. Fathers wanted to feel fully informed of the situations which developed and this was especially true when interventions were considered a necessity by medical professionals. Meeting baby was an awesome experience for the father and he was eager to hold and cuddle his baby for the first time. However, he wanted the mother to hold their baby as soon as possible. He wanted to be there close to her and their baby as the bonding and sense of family developed in those first hours after the baby's birth. When the opportunity for this early family bonding was disrupted for some reason, the father felt acute distress.

Each of the prerequisites described above enhanced the father's experience of the birth of his first child. Each one that was unmet lessened his satisfaction with his experience. For

most fathers their experience of the mothers' birth journeys was a varying mix of prerequisites met and those unmet.

However, when the father perceived that all the above prerequisites were met, the father considered his experience of the mother's birth journey to be the perfect experience:

[It was a] perfect birth (185)

The next chapter reports the results of the exploration for models of predictive variables for birth satisfaction, parenting self-efficacy, family life satisfaction and postpartum depression using hierarchical multiple regression (**sequential regression**).

Chapter 13 – Results – Post hoc analysis

13.1. Chapter overview

Research outlined in Chapters one to four suggests that there are many factors that contribute towards birth satisfaction, parenting self-efficacy, family life satisfaction, and postpartum depression. The analyses of the trial data and the qualitative data added to this information. The hypotheses for the four post birth outcomes in the trial were either inconclusively or not supported. A post hoc analysis became desirable for these outcomes. Two-step hierarchical multiple regression (sequential regression) was used to identify models of predictive variables for these outcomes. Model 1 corrected for the intervention used in the trial.

13.2. Hypotheses summary

The post-hoc analysis component of the mother and father first-time birth research project was exploratory. This analysis aimed to determine what factors, of those tested in the trial, predicted or were associated with birth satisfaction and the three six month factors parenting self-efficacy, family life satisfaction, and postpartum depression, for mothers and fathers after controlling for the intervention?

Four hypotheses were proposed that stated:

- demographic and pre-birth factors would predict birth satisfaction for mothers and fathers
- other birth factors would be associated with birth satisfaction for mothers and fathers
- demographic and pre-six month factors would predict parenting self-efficacy, family life satisfaction and postpartum depression at six months for mothers and fathers
- other six-month factors would be associated with parenting self-efficacy, family life satisfaction and postpartum depression at six months for mothers and fathers

See Chapter 5 for the detailed hypotheses.

13.3. Mothers' results

13.3.1. Evaluating the model of predictors for birth satisfaction - Mothers

Both Model 1, ($R = 0.296$, $R^2 = 0.088$, $F [2, 134] = 6.457$, $p = 0.002$), and Model 2, ($R = 0.586$, $R^2 = 0.343$, $F [11, 125] = 5.935$, $p < 0.001$), gave statistically significant results indicating that both models contain statistically significant predictors of birth satisfaction for mothers.

Table 13.1.

Summary of hierarchical multiple regression analysis for variables predicting birth satisfaction for mothers.

Predictor	B	Std. Error	Beta	t	Sig.	Adjusted R ²
MODEL 1						.074
Group variable 1	1.106	4.604	.024	.240	.811	
Group variable 2	-12.819	4.544	-.282	-2.821	.006**	
MODEL 2						.285
Group variable 1	3.197	4.194	.069	.762	.447	
Group variable 2	-7.591	4.302	-.167	-1.764	.080	
Depression (baseline)(EPDS)	-.246	.434	-.051	-.566	.573	
Family life satisfaction (baseline)	-.142	.147	-.091	-.969	.335	
Childbirth self-efficacy (outcome)	.017	.042	.034	.407	.684	
Pregnancy anxiety (outcome)	-.532	.368	-.119	-1.444	.151	
Medical intervention experienced	8.177	4.380	.165	1.867	.064	
Induction experienced	-10.302	4.010	-.219	-2.569	.011*	
Caesarean experienced	-13.232	3.994	-.276	-3.313	.001***	
Labour expectations met	4.173	4.073	.088	1.025	.307	
Birth expectations met	8.808	4.212	.184	2.091	.039*	

Significance * $p < 0.05$, ** $p < 0.01$, *** $p = 0.001$

Results of the regression analysis did not confirm Research Hypothesis One and provided only partial confirmation for Research Hypothesis Two. Model 1 suggested that the intervention contributed towards our understanding of birth satisfaction by a small (effect size = 0.088) statistically significant amount. In Model 2, introducing the covariates: induction (experienced was associated with lower birth satisfaction); caesarean (experienced was associated lower birth satisfaction); and birth expectations (positive expectation met was associated with higher birth satisfaction), increased our understanding of what contributes towards birth satisfaction by a moderate statistically significant amount (effect size = 0.343). The other remaining covariates of interest did not predict/were not associated with birth satisfaction for mothers (see Table 13.1).

13.3.2. Evaluating the model of predictors for parenting self-efficacy at six months - Mothers

Model 1, ($R = 0.125$, $R^2 = 0.016$, $F [2, 132] = 1.053$, $p = 0.352$), was not a statistically significant predictor of parenting self-efficacy for mothers at six months post birth. Model 2, ($R = 0.753$, $R^2 = 0.567$, $F [13, 121] = 12.168$, $p < 0.001$), gave statistically significant results

indicating that Model 2 contains statistically significant predictors of/factors associated with parenting self-efficacy at six months post birth for mothers.

Table 13.2.

Summary of hierarchical multiple regression analysis for variables predicting parenting self-efficacy for mothers.

Predictor	B	Std. Error	Beta	t	Sig.	Adjusted R ²
MODEL 1						.001
Group variable 1	6.373	4.391	.152	1.451	.149	
Group variable 2	3.486	4.334	.084	.804	.423	
MODEL 2						.520
Group variable 1	5.768	3.227	.138	1.787	.076	
Group variable 2	4.027	3.320	.097	1.213	.227	
Trait anxiety	.200	.150	.098	1.333	.185	
Parenting self-efficacy (baseline)	.350	.046	.543	7.598	<.001***	
Childbirth self-efficacy (outcome)	.038	.032	.082	1.170	.244	
Pregnancy anxiety (outcome)	.358	.282	.088	1.270	.206	
Use of touch from others	-7.638	2.661	-.178	-2.871	.005**	
Antenatal class attendance	4.576	4.530	.062	1.010	.314	
Parenting class attendance	3.048	4.609	.041	.661	.510	
Medical intervention	-5.943	2.891	-.132	-2.056	.042*	
Birth satisfaction	-.004	.061	-.005	-.070	.945	
Family life satisfaction (outcome)	-.241	.098	-.192	-2.453	.016*	
Postpartum depression ¹ (outcome)	-.709	.381	-.146	-1.863	.065	

Significance *p < 0.05, **p < 0.01, ***p < 0.001

Results of the regression analysis provided partial confirmation for Research Hypotheses Three and Four. Model 1 suggested that the intervention did not contribute towards our understanding of parenting self-efficacy for mothers (effect size = 0.016). In Model 2, introducing the covariates: parenting self-efficacy (baseline) (higher predicted higher parenting self-efficacy at outcome); medical intervention (experienced predicted lower parenting self-efficacy); use of touch from others during labour (experienced predicted lower parenting self-efficacy); and family life satisfaction (outcome) (higher was associated with higher parenting self-efficacy), increased our understanding of what contributes towards parenting self-efficacy at six months post birth for mothers by a strong statistically significant amount (effect size = 0.567). While postpartum depression (outcome) was not statistically significant (p = 0.065) it does suggest a trend for a negative association between postpartum depression and parenting self-efficacy at six months. The other covariates of interest did not predict/were not associated with parenting self-efficacy at six months post birth for mothers (see Table 13.2).

¹ Throughout these tables postpartum depression refers to the EPDS score which gives an indication of level of depression but not a diagnosis of postpartum depression

² Unexpected result

13.3.3. Evaluating the model of predictors for family life satisfaction at six months – Mothers

Please note, the larger the family satisfaction score, the less satisfied participants were with their family life.

Model 1, ($R = 0.117$, $R^2 = 0.014$, $F [2, 134] = 0.929$, $p = 0.397$), was not a statistically significant predictor of family life satisfaction for mothers at six months post birth. Model 2, ($R = 0.762$, $R^2 = 0.580$, $F [16, 120] = 10.376$, $p < 0.001$), gave statistically significant results indicating that Model 2 contains statistically significant predictors of/factors associated with family life satisfaction at six months post birth for mothers.

Table 13.3.

Summary of hierarchical multiple regression analysis for variables predicting family life satisfaction for mothers. Higher score reflects less satisfaction.

Predictor	B	Std. Error	Beta	t	Sig.	Adjusted R ²
MODEL 1						-.001[®]
Group variable 1	-4.265	3.469	-.128	-1.230	.221	
Group variable 2	-4.042	3.423	-.123	-1.181	.240	
MODEL 2						.524
Group variable 1	-2.016	2.585	-.060	-.780	.437	
Group variable 2	-5.207	2.623	-.158	-1.985	.049*	
Tertiary qualification	6.806	2.764	.151	2.463	.015*	
Family satisfaction (baseline)	.446	.091	.394	4.898	<.001***	
Childbirth self-efficacy (baseline)	.054	.029	.153	1.872	.064	
Pregnancy anxiety (baseline)	.599	.298	.194	2.009	.047*	
Depression (baseline)	-.668	.309	-.192	-2.163	.033*	
Childbirth distress expectation	-.116	.054	-.155	-2.166	.032*	
Intervention expectation pre-birth	.048	.042	.087	1.146	.254	
Childbirth self-efficacy (outcome)	-.020	.032	-.053	-.611	.542	
Pregnancy anxiety (outcome)	.071	.320	.022	.221	.825	
Childbirth pain intensity	-.097	.036	-.170	-2.708	.008**	
Non-medicated pain relief help	-.082	.038	-.149	-2.136	.035*	
Birth satisfaction	-.008	.047	-.011	-.162	.872	
Parenting self-efficacy (outcome)	-.178	.055	-.223	-3.224	.002**	
Postpartum depression (outcome)	1.723	.284	.446	6.068	<.001***	

Significance * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; [®]this negative number indicates how poor this model is in explaining the outcome variable.

Results of the regression analysis provided partial confirmation for Research Hypotheses Three and Four. Model 1 suggests that the intervention did not contribute towards our understanding of family life satisfaction (effect size = 0.014). In Model 2, introducing the covariates: tertiary qualification (³having a tertiary education predicted lower family life satisfaction); family life satisfaction (baseline) (higher predicted higher family life satisfaction at outcome); pregnancy anxiety (baseline) (higher predicted lower family life satisfaction);

³ Unexpected result

depression (baseline) (⁴higher predicted higher family life satisfaction); expectation of childbirth distress (⁵higher predicted higher family life satisfaction); childbirth pain intensity (⁶higher predicted higher family life satisfaction); helpfulness of non-med pain management (helpful predicted higher family life satisfaction); parenting self-efficacy (outcome) (higher was associated with higher family life satisfaction); and postpartum depression (outcome) (lower was associated with higher family life satisfaction) increased our understanding of what contributes towards family life satisfaction at six months post birth for mothers by a strong statistically significant amount (effect size = 0.580). The other covariates of interest did not predict/were not associated with family life satisfaction at six months post birth for mothers (see Table 13.3).

13.3.4. Evaluating the model of predictors for postpartum depression at six months - Mothers

Model 1, ($R = 0.146$, $R^2 = 0.021$, $F [2, 134] = 1.450$, $p = 0.238$), was not a statistically significant predictor of postpartum depression for mothers at six months post birth. Model 2, ($R = 0.718$, $R^2 = 0.516$, $F [11, 125] = 12.118$, $p < 0.001$), gave statistically significant results indicating that Model 2 contains statistically significant predictors of/factors associated with postpartum depression at six months post birth for mothers.

Table 13.4.

Summary of hierarchical multiple regression analysis for variables predicting postpartum depression for mothers.

Predictor	B	Std. Error	Beta	t	Sig.	Adjusted R ²
MODEL 1						.007
Group variable 1	-1.428	.895	-.165	-1.596	.113	
Group variable 2	-1.229	.883	-.144	-1.392	.166	
MODEL 2						.473
Group variable 1	-.305	.690	-.035	-.442	.660	
Group variable 2	.468	.717	.055	.652	.516	
Depression (baseline)	.282	.080	.313	3.520	.001***	
Trait anxiety	.108	.038	.257	2.826	.005**	
Family satisfaction (baseline)	-.080	.025	-.273	-3.150	.002**	
Childbirth self-efficacy (outcome)	.009	.007	.096	1.295	.198	
Pregnancy anxiety (outcome)	-.005	.060	-.006	-.081	.935	
Other intervention (post-birth)	-1.482	.597	-.158	-2.481	.014*	
Birth satisfaction	.015	.013	.083	1.205	.230	
Parenting self-efficacy (outcome)	-.036	.015	-.177	-2.444	.016*	
Family life satisfaction (outcome)	.105	.020	.407	5.217	<.001***	

Significance * $p < 0.05$, ** $p < 0.01$, *** $p \leq 0.001$

⁴ Unexpected result

⁵ Unexpected result

⁶ Unexpected result

Results of the regression analysis provided partial confirmation for Research Hypotheses Three and Four. Model 1 suggests that the intervention did not contribute towards our understanding of postpartum depression for mothers (effect size = 0.021). In Model 2, introducing the covariates: depression (baseline) (higher predicted higher postpartum depression); trait anxiety (higher predicted higher postpartum depression); family life satisfaction (baseline) (⁷higher predicted higher postpartum depression); other intervention (⁸experienced predicted lower postpartum depression); parenting self-efficacy (outcome) (higher was associated with lower postpartum depression); and family life satisfaction (outcome) (higher was associated with lower postpartum depression), increased our understanding of what contributes towards postpartum depression at six months post birth for mothers by a strong statistically significant amount (effect size = 0.516). The other covariates of interest did not predict/were not associated with postpartum depression at six months post birth for mothers (see Table 13.4).

⁷ Unexpected result

⁸ Unexpected result

13.4. Fathers' results

13.4.1. Evaluating the model of predictors for birth satisfaction - Fathers

Both Model 1, ($R = 0.291$, $R^2 = 0.084$, $F [2, 107] = 4.936$, $p = 0.009$), and Model 2, ($R = 0.670$, $R^2 = 0.448$, $F [15, 94] = 5.096$, $p < 0.001$), gave statistically significant results indicating that both models contain statistically significant predictors of birth satisfaction for fathers.

Table 13.5.

Summary of hierarchical multiple regression analysis for variables predicting birth satisfaction for fathers.

Predictor	B	Std. Error	Beta	t	Sig.	Adjusted R ²
MODEL 1						.067
Group variable 1	.166	5.026	.004	.033	.974	
Group variable 2	-12.481	4.903	-.288	-2.546	.012*	
MODEL 2						.360
Group variable 1	-.066	4.417	-.001	-.015	.988	
Group variable 2	-5.972	4.438	-.138	-1.346	.182	
Employment Status variable 1	-27.575	9.250	-.239	-2.981	.004**	
Employment Status variable 2	-6.303	8.379	-.061	-.752	.454	
Employment Status variable 3	-1.176	7.740	-.012	-.152	.880	
Family life satisfaction (baseline)	-.279	.129	-.194	-2.163	.033*	
Childbirth coaching self-efficacy (outcome)	.014	.036	.033	.383	.703	
Pregnancy anxiety (outcome)	-.500	.407	-.111	-1.227	.223	
Usefulness of antenatal classes	12.436	4.361	.234	2.852	.005**	
Parenting classes attended	-9.281	7.402	-.105	-1.254	.213	
Epidural experienced	8.507	3.976	.201	2.139	.035*	
Induction experienced	-14.227	5.565	-.222	-2.556	.012*	
Caesarean experienced	-8.886	4.273	-.191	-2.080	.040*	
Other intervention	-7.763	5.596	-.113	-1.387	.169	
Birth expectations met	10.769	3.838	.255	2.806	.006**	

Significance * $p < 0.05$, ** $p < 0.01$

Results of the regression analysis provided partial confirmation for Research Hypotheses One and Two. Model 1 suggested that the intervention contributed towards our understanding of birth satisfaction by a small statistically significant amount (effect size = 0.084). In Model 2, introducing the covariates: employment status (full time employment predicted higher birth satisfaction); family life satisfaction (baseline) (higher predicted higher birth satisfaction); usefulness of antenatal classes (useful was associated with higher birth satisfaction); epidural (mother experienced was associated with higher birth satisfaction); induction (mother experienced was associated with lower birth satisfaction); caesarean (mother experienced was associated with lower birth satisfaction); and birth expectations (positive expectation met was associated with higher birth satisfaction), increased our understanding of what contributes towards birth satisfaction by a moderate statistically significant amount (effect size = 0.448). The other remaining covariates of interest did not predict/were not associated with birth satisfaction for fathers (see Table 13.5).

13.4.2. Evaluating the model of predictors for parenting self-efficacy at six months - Fathers

Model 1, ($R = 0.134$, $R^2 = 0.018$, $F [2, 111] = 1.021$, $p = 0.364$), was not a statistically significant predictor of parenting self-efficacy for fathers at six months post birth. Model 2, ($R = 0.756$, $R^2 = 0.572$, $F [12, 101] = 11.226$, $p = < 0.001$), gave statistically significant results indicating that Model 2 contains statistically significant predictors of/factors associated with parenting self-efficacy at six months post birth for fathers.

Table 13.6.

Summary of hierarchical multiple regression analysis for variables predicting parenting self-efficacy for fathers.

Predictor	B	Std. Error	Beta	t	Sig.	Adjusted R ²
MODEL 1						.001
Group variable 1	9.123	6.623	.158	1.377	.171	
Group variable 2	7.176	6.522	.126	1.100	.274	
MODEL 2						.521
Group variable 1	7.170	4.725	.124	1.517	.132	
Group variable 2	5.980	4.806	.105	1.244	.216	
Parenting self-efficacy (baseline)	.484	.075	.511	6.474	<.001***	
Parenting classes	5.894	7.868	.051	.749	.456	
Childbirth coaching self-efficacy (outcome)	.030	.039	.054	.757	.451	
Pregnancy anxiety (outcome)	.169	.461	.028	.366	.715	
Childbirth distress expectation	-.203	.089	-.166	-2.268	.025*	
Witnessing labour pain distress	-.093	.059	-.110	-1.564	.121	
Labour expectations met	-8.051	4.032	-.143	-1.996	.049*	
Birth satisfaction	-.144	.117	-.094	-1.227	.223	
Family life satisfaction (outcome)	-.609	.133	-.394	-4.562	<.001***	
Postpartum depression (outcome)	.385	.637	.055	.605	.547	

Significance * $p < 0.05$, *** $p < 0.001$

Results of the regression analysis provided partial confirmation for Research Hypotheses Three and Four. Model 1 suggests that the intervention did not contribute towards our understanding of parenting self-efficacy for fathers (effect size = 0.018). In Model 2, introducing the covariates: parenting self-efficacy (baseline) (higher predicted higher parenting self-efficacy at outcome); childbirth distress expectation (higher predicted lower parenting self-efficacy); labour expectations met (negative expectations met predicted lower parenting self-efficacy); and family life satisfaction (outcome) (higher was associated with higher parenting self-efficacy), increased our understanding of what contributes towards parenting self-efficacy at six months post birth for fathers by a strong statistically significant amount (effect size = 0.572). The other covariates of interest did not predict/were not associated with parenting self-efficacy at six months post birth for fathers (see Table 13.6).

13.4.3. Evaluating the model of predictors for family life satisfaction at six months - Fathers

Please note, the larger the family satisfaction score, the less satisfied participants were with their family life.

Model 1, ($R = 0.065$, $R^2 = 0.004$, $F [2, 111] = 0.239$, $p = 0.788$), was not a statistically significant predictor of family life satisfaction for fathers at six months post birth. Model 2, ($R = 0.789$, $R^2 = 0.623$, $F [11, 102] = 15.333$, $p = < 0.001$), gave statistically significant results indicating that Model 2 contains statistically significant predictors of/factors associated with family life satisfaction at six months post birth for fathers.

Table 13.7.

Summary of hierarchical multiple regression analysis for variables predicting family life satisfaction for fathers. Higher score reflects less satisfaction.

Predictor	B	Std. Error	Beta	t	Sig.	Adjusted R ²
MODEL 1						-.014 [®]
Group variable 1	-2.911	4.318	-.078	-.674	.502	
Group variable 2	-2.161	4.251	-.059	-.508	.612	
MODEL 2						.583
Group variable 1	.765	2.837	.020	.270	.788	
Group variable 2	-.643	2.865	-.017	-.224	.823	
Family life satisfaction (baseline)	.369	.102	.296	3.613	<.001***	
Trait anxiety	.243	.178	.114	1.364	.176	
Childbirth coaching self-efficacy (outcome)	-.025	.023	-.071	-1.081	.282	
Pregnancy anxiety (outcome)	-.557	.278	-.144	-2.007	.047*	
Difficulty witnessing labour pain	-.080	.035	-.146	-2.252	.026*	
Medical intervention	6.475	2.402	.174	2.696	.008**	
Birth satisfaction	-.006	.066	-.006	-.090	.929	
Parenting self-efficacy (outcome)	-.134	.049	-.207	-2.727	.008**	
Postpartum depression (outcome)	1.961	.338	.429	5.799	<.001***	

Significance * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; [®]this negative number indicates how poor this model is in explaining the outcome variable.

Results of the regression analysis provided partial confirmation for Research Hypotheses Three and Four. Model 1 suggests that the intervention did not contribute towards our understanding of family life satisfaction (effect size = 0.004). In Model 2, introducing the covariates: family life satisfaction (baseline) (higher predicted higher family life satisfaction at outcome); pregnancy anxiety (outcome) (⁹higher predicted higher family life satisfaction); difficulty witnessing labour pain (¹⁰higher predicted higher family life satisfaction); medical intervention (mother experienced predicted lower family life satisfaction); parenting self-efficacy (outcome) (higher was associated with higher family life satisfaction); and postpartum

⁹ Unexpected result

¹⁰ Unexpected result

depression (outcome) (higher was associated with lower family life satisfaction), increased our understanding of what contributes towards family life satisfaction at six months post birth for fathers by a strong statistically significant amount (effect size = 0.623). The other covariates of interest did not predict/were not associated with family life satisfaction at six months post birth for fathers (see Table 13.7).

13.4.4. Evaluating the model of predictors for postpartum depression at six months - Fathers

Model 1, ($R = 0.113$, $R^2 = 0.013$, $F [2, 110] = 0.204$, $p = 0.705$), was not a statistically significant predictor of postpartum depression for fathers at six months post birth. Model 2, ($R = 0.770$, $R^2 = 0.592$, $F [12, 100] = 12.105$, $p = < 0.001$), gave statistically significant results indicating that Model 2 contains statistically significant predictors of/factors associated with postpartum depression at six months post birth for fathers.

Table 13.8.

Summary of hierarchical multiple regression analysis for variables predicting postpartum depression for fathers.

Predictor	B	Std. Error	Beta	t	Sig.	Adjusted R ²
MODEL 1						-.005 [®]
Group variable 1	-.883	.936	-.109	-.944	.347	
Group variable 2	.051	.926	.006	.056	.956	
MODEL 2						.543
Group variable 1	-.498	.641	-.061	-.777	.439	
Group variable 2	.341	.658	.042	.519	.605	
Depression (baseline)	.345	.088	.326	3.933	<.001***	
Family life satisfaction (baseline)	-.069	.023	-.256	-2.969	.004**	
Childbirth coaching self-efficacy (outcome)	.008	.005	.108	1.570	.119	
Pregnancy anxiety (outcome)	.230	.066	.271	3.489	.001***	
Labour length expectation pre-birth	-.042	.018	-.155	-2.260	.026*	
Helpful - non-med pain manage	.028	.009	.214	3.149	.002**	
Other intervention post-birth	2.386	.840	.189	2.839	.005**	
Birth satisfaction	-.002	.015	-.008	-.119	.905	
Parenting self-efficacy (outcome)	-.014	.011	-.096	-1.191	.237	
Family life satisfaction (outcome)	.110	.020	.495	5.571	<.001***	

Significance * $p < 0.05$, ** $p < 0.01$, *** $p \leq 0.001$; [®]this negative number indicates how poor this model is in explaining the outcome variable.

Results of the regression analysis provided partial confirmation for Research Hypotheses Three and Four. Model 1 suggests that the intervention did not contribute towards our understanding of postpartum depression for fathers (effect size = 0.013). In Model 2, introducing the covariates: depression (baseline) (higher predicted higher postpartum depression); family life satisfaction (baseline) (¹¹higher predicted higher postpartum depression); pregnancy anxiety (outcome) (higher predicted higher postpartum depression);

¹¹ Unexpected result

labour length expectation (¹²longer predicted lower postpartum depression); helpfulness of non-medication pain management (¹³useful predicted higher postpartum depression); other intervention (experienced predicted higher postpartum depression); and family life satisfaction (outcome) (higher was associated with lower postpartum depression), increased our understanding of what contributes towards postpartum depression at six months post birth for fathers by a strong statistically significant amount (effect size = 0.592). The other covariates of interest did not predict/were not associated with postpartum depression at six months post birth for fathers (see Table 13.8).

13.5. Summary

Hierarchical multiple regression was used to examine the relationships between the four post birth outcome variables and other factors which predicted or were associated with them, while controlling for the intervention (Group). It gave information on the effect of each relationship independent of the effect of other variables. This analysis has revealed variables which predict/are associated with birth satisfaction, parenting self-efficacy, family life satisfaction and post-partum depression. These findings will form a useful addition to the known literature (see Tables 11.9 and 11.10).

The following chapter reports the midwives' experiences of work-related and comparative work-related stress levels when working with participating clients.

¹² Unexpected result

¹³ Unexpected result

Table 13.9.

Summary of the findings of the hierarchical regression analysis for predictors of the four post birth dependent variables at outcome for mothers.

After correcting for Group, predictors of the following dependent variables at outcome for mothers were:			
Birth satisfaction (BS)	Parenting self-efficacy (PSE)	Family life satisfaction (FLS)	Postpartum depression (PPD)
<ul style="list-style-type: none"> • Induction ↓ BS • Caesarean ↓ BS • Birth expectations met ↑ BS 	<ul style="list-style-type: none"> • Higher PSE (baseline) ↑ PSE • Labour/birth medical intervention ↓ PSE • Touch by others as pain management during labour ↓ PSE* • Higher FLS (outcome) ↑ PSE 	<ul style="list-style-type: none"> • Tertiary qualification ↓ FLS* • Higher FLS (baseline) ↑ FLS • Higher Pregnancy Anxiety (baseline) ↓ FLS • Higher depression (baseline) ↑ FLS* • Higher childbirth distress expectation ↑ FLS* • Higher labour pain intensity ↑ FLS* • Higher non-medicated pain management helpfulness ↑ FLS • Higher PSE (baseline) ↑ FLS • Higher PPD (outcome) ↓ FLS 	<ul style="list-style-type: none"> • Higher depression (baseline) ↑ PPD • Higher trait anxiety ↑ PPD • Higher FLS (baseline) ↑ PPD* • Experiencing other interventions ↓ PPD* • Higher PSE (outcome) ↓ PPD • Higher FLS (outcome) ↓ PPD

Table 13.10.

Summary of the findings of the hierarchical regression analysis for predictors of the four post birth dependent variables at outcome for fathers.

After correcting for Group, predictors of the following dependent variables at outcome for fathers were:			
Birth satisfaction (BS)	Parenting self-efficacy (PSE)	Family life satisfaction (FLS)	Postpartum depression (PPD)
<ul style="list-style-type: none"> • Compared to full-time employment part-time employment ↓ BS • Higher family life satisfaction (baseline) ↑ BS • Usefulness of antenatal classes ↑ BS • Use of epidural ↑ BS • Induction ↓ BS • Caesarean ↓ BS • Birth expectations met ↑ BS 	<ul style="list-style-type: none"> • Higher PSE (baseline) ↑ PSE • Higher childbirth distress expectation for the mother ↓ PSE • Higher met labour expectations ↓ PSE* • Higher FLS (outcome) ↑ PSE 	<ul style="list-style-type: none"> • Higher FLS (baseline) ↑ FLS • Higher pregnancy anxiety (outcome) ↑ FLS* • Higher difficulty witnessing labour pain ↑ FLS* • Labour/birth medical intervention ↓ FLS • Higher PSE (outcome) ↑ FLS • Higher PPD (outcome) ↓ FLS 	<ul style="list-style-type: none"> • Higher depression (baseline) ↑ PPD • Higher FLS (baseline) ↑ PPD* • Higher Pregnancy Anxiety (outcome) ↑ PPD • Longer labour length expectation ↓ PPD* • Higher non-medicated pain management helpfulness ↑ PPD* • Other interventions ↑ PPD • Higher FLS (outcome) ↓ PPD

* For both tables, an asterisk indicates that these results are not in the predicted direction. For further discussion of these unexpected results see Chapter 15.

Chapter 14 – Results – Work-related stress, comparative work-related stress, and the New Zealand midwife

14.1. Chapter overview

This chapter reports the findings of the analysis of the midwife data to determine whether, in an uncomplicated birth, stress levels were reduced for midwives working with participants in the Intervention Group compared to the other two groups, and how this related to the stress levels they generally experienced in their private practices.

14.2. Definitions

- **work-related stress** – refers to that stress experienced by midwives working with participants in the trial only
- **comparative work-related stress** – refers to that stress experienced by midwives working with participants in the trial compared to the stress they generally experienced when working with other clients in their private practice.
- **unexpected physical complications** (which may increase stress levels for midwives as well as participants due to possible uncertainty of outcome as well as possible disappointment. Unexpected complications may also have required assistance from other medical professionals which may also have introduced further stress especially if these professionals were unfamiliar or there was any disagreement between midwives and these professionals) include any of the following, either singly, or in combination:
 - induction, augmentation, episiotomy, forceps delivery, ventouse delivery, caesarean delivery
 - premature births
 - other, including delivery of twins, tears, haemorrhage and any other physical difficulties identified by midwives requiring emergency and/or specialist care

14.3. Hypotheses summary

Midwives working with participants in the Intervention Group will experience less work-related stress and less comparative work-related stress compared to the midwives working with participants in the Active and Passive Control Groups who did not use this intervention.

14.4. Results: Work-related stress levels

This investigated differences between groups for work-related stress experienced by midwives working with participants in the trial only. A one way ANOVA of the **square root transformed data** for work-related stress levels determined there were no statistically

significant differences between groups for midwives' work-related stress levels ($F [2,101] = 1.616, p = .204$). However, the means were not similar (Intervention Group = 4.536 (SD = 2.204); Active Control Group = 5.563 (SD = 2.511); Passive Control Group = 5.143 (SD = 2.517) [higher scores indicated more stress]) but due to the heterogeneity in the sample resulting in large standard deviations, the pattern shown in the means was not statistically significant.

Midwives reported that 50% of their clients in the Intervention Group, 46% of their clients in the Active Control Group, and 52% of their clients in the Passive Control Group experienced at least one complication during labour and/or birth. Consequently, an ANCOVA was conducted on the transformed data for work-related stress levels, controlling for physical complications experienced during labour and/or birth.

An ANCOVA correcting for physical complications determined there were no statistically significant differences between groups for midwives in work-related stress when working with participants in this study ($F [2,101] = 1.786, p = .173$).

The hypothesis that those midwives attending participants in the Intervention Group would feel less work-related stress compared to the midwives working with participants in the Active and Passive Control Groups was not supported.

14.5. Results: Comparative stress levels

This investigated differences between groups for work-related stress experienced by midwives working with participants in the trial compared to the stress they generally experienced when working with other clients in private practice. A one way ANOVA determined there were no statistically significant differences between groups for midwives' comparative stress levels ($F [2,101] = 2.918, p = .059$). However, the means were not similar (Intervention Group = 30.13 (SD = 23.53); Active Control Group = 43.95 (SD = 27.24); Passive Control Group = 41.52 (SD = 24.20) and the analysis was approaching significance but due to high standard deviations, statistical significance was not reached. The wide range in standard deviations means it is difficult to generalise on comparative work-related stress for midwives because the midwives' perceptions of stress are variable over this heterogeneous population, which contains both uncomplicated labours and deliveries, and others that required interventions, emergency, and/or specialist attention.

An ANCOVA controlling for physical complications which required interventions, emergency, and/or specialist attention was conducted. This determined there was a statistically significant difference between groups in comparative stress for midwives ($F [2,101] = 3.150, p = .047$).

The error bars for the means shown for Group 1 (Intervention) do not overlap with the error bars for the means of either Group 2 (Active Control) or Group 3 (Passive Control)

indicating that there is a statistically significant difference between the comparative stress levels of midwives caring for participants in the Intervention Group compared to the comparative stress levels experienced by midwives caring for participants in the Active and Passive Control Groups, after controlling for physical complications during labour and/or birth (See Figure 14.1).

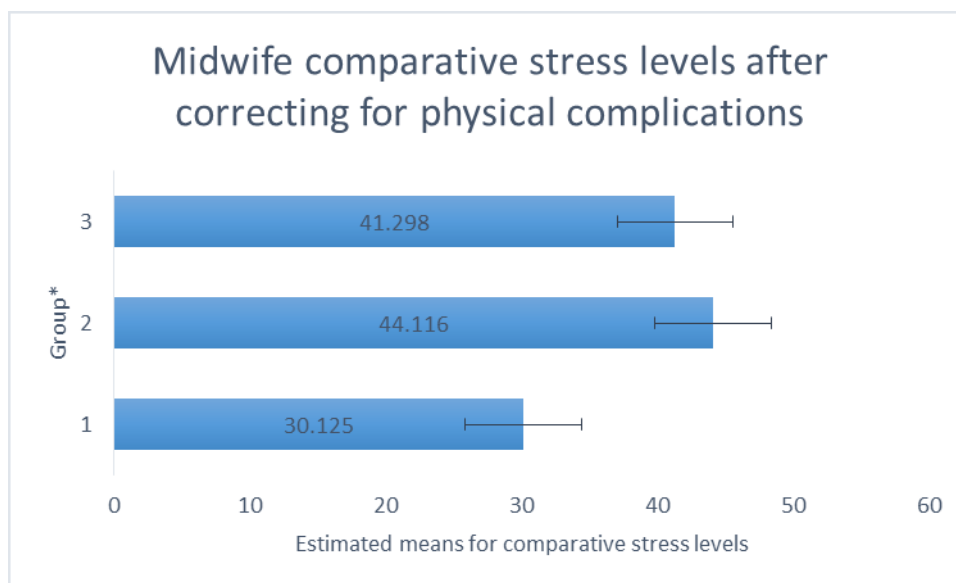


Figure 14.1. Estimated means for comparative stress levels between groups for midwives after correction for physical complications during labour and/or birth. The score range is 0-100 with higher scores indicating greater stress.

*Group 1 = Intervention Group; Group 2 = Active Control Group; Group 3 = Passive Control Group

After correcting for physical complications during labour and/or birth, the hypothesis that those midwives attending participants in the Intervention Group would feel less comparative work-related stress compared to midwives working with participants in the Active and Passive Control Groups was supported.

14.6. Summary

Many women in this project experienced unexpected physical complications which required midwives to seek assistance from other maternity professionals. This had the potential to create extra unexpected stress for both the participant and her midwife. This project sought to discover whether in an uncomplicated birth in which the midwife did not feel the need to summon the assistance of other maternity professional, the use of childbirth skills by the mother and childbirth coaching skills by the father could reduce stress for midwives working with these participants. Consequently, unexpected complications were controlled for.

Being responsible for the wellbeing of a labouring woman about to give birth can be a stressful occupation. In this study, work-related stress varied from midwife to midwife and from situation to situation, ranging from scores on the VAS of zero (no stress) to 90 (100 being very high level of stress). Some women delivered quickly with no complications at all while others had very long (up to three days), complicated, and difficult labours which ended in caesarean sections. However, there were no statistically significant differences between groups for the work-related stress experienced by midwives, even after controlling for complications. This may due to the high percentage of women in each group who experienced some sort of complication. It may also be difficult to avoid stress when responsible for the wellbeing of a labouring woman and her infant during childbirth. Alternatively, as our findings showed a trend in the expected direction, and because of high standard deviations, this may not be a reliable result and could benefit from further investigation. Due to the high percentage of women experiencing complications, greater numbers of participants may be required to show this effect.

After controlling for any extra stress which may have been caused by physical complications during labour and/or delivery, there was a statistically significant difference between groups for comparative work-related stress. Those midwives who worked with participants in the Intervention Group experienced less stress than they generally experienced when working with their clients in private practice overall, and compared to the two control groups. This suggests that participants in the Intervention Group who had learned birthing and birth coaching skills were less stressful to work with than those clients who had not learned and used these skills. This finding suggests that a greater knowledge of such skills by women about to give birth, and of childbirth coaching skills by the father (or others) supporting her, could potentially aid in reducing the work-related stress experienced by midwives in New Zealand.

The following and final chapter discusses the results of this research project.

Chapter 15 – Discussion

15.1. Chapter overview

This chapter reviews the findings from the various analyses which make up this research project and relates these findings to the published literature for mothers and fathers separately. After which it reflects on the limitations and strengths of this research project. It also considers directions for future research, and proffers some conclusions for the research project.

15.2. Summary of key results

A randomized controlled trial examined the effectiveness of skills-based approach to childbirth preparation. This approach differed from the preparation generally undertaken by new parents in New Zealand whose preparation is generally based on information about labour and delivery coupled with birth plans developed with their LMCs. A 3X2 repeated measures ANOVA revealed that the three groups of mothers (Intervention, Active Control, and Passive Control) changed differently over time for childbirth self-efficacy and family life satisfaction. The Intervention Group developed higher childbirth self-efficacy over time while their family life satisfaction decreased over time compared to the other two groups. A one-way ANOVA revealed that the Intervention Group reported significantly higher childbirth self-efficacy at 36 weeks gestation compared to the other two groups but that there was no significant difference between groups for family life satisfaction at six months postpartum. A one-way ANOVA revealed that mothers and fathers in the Intervention and Active Control Groups reported higher birth satisfaction compared to the Passive Control Group.

Qualitative analysis examined both parents' comments on their perception of their childbirth experiences. Analysis of the qualitative data identified themes which reflected how parents perceived their experiences and has deepened our understanding of both the New Zealand first-time mother's, and first-time father's, experiences of childbirth. For mothers three major themes emerged from the phenomenological thematic analysis of the birth satisfaction data. These were: *owning the process; support/care and supporters/carers; and feeling safe physically and psychologically*. When mothers felt they had owned their own process, that their support/care and supporters/carers fulfilled requirements, and they had felt both physically and psychologically safe throughout childbirth and after, they reported greater birth satisfaction. For fathers four major themes emerged from the data. These were: *safety of mother and baby; understanding his support role; mother in control and managing pain; and care and communication during and after birth*. When the mother had a safe delivery, the father

understood his role during childbirth, the mother managed well, and care and communication was good throughout, the father reported greater childbirth satisfaction.

Post hoc regression analyses sought to determine predictors of/other factors associated with the four post birth outcomes for both parents. After controlling for the effects of the intervention, hierarchical multiple regression analysis identified specific factors influencing birth satisfaction, parenting self-efficacy, family life satisfaction, and postpartum depression. These analyses added to our understanding for both parents (see Tables 13.9 and 13.10 for a summary of findings).

Lastly, this research project examined the possibility that the midwife, as an independent practitioner, could benefit if clients demonstrated greater childbirth self-efficacy and a greater willingness to take more responsibility for their own birthing processes. An ANCOVA correcting for unexpected complications determined that midwives working with participants in the Intervention Group experienced less stress than they generally experienced working with their clients, compared to the midwives working with the other two groups.

15.3. Mothers' results

15.3.1. Mothers' childbirth self-efficacy at 36 weeks gestation

Mothers in the Intervention Group changed significantly over time and demonstrated greater childbirth self-efficacy at 36 weeks gestation compared to the two control groups. Consequently, we are able to conclude that the use of *The Pink Kit Method for Birthing Better*® was a useful intervention as far as increasing childbirth self-efficacy for first-time mothers.

This finding supports Klusman (1975) who found that those women who had some strategies to manage labour pain felt more in control of their process than those who had only information about labour and delivery. This finding also reinforces that of other researchers, that self-efficacy for childbirth management is important if women want to feel confident that they will be able to maintain control during labour by managing their labour pain and delivery (Fair & Morrison, 2012; Goodman et al., 2004; Stevens et al., 2011).

All groups had been provided with information about childbirth from their LMCs and antenatal classes, as well as their own private research. The difference between the Intervention Group and the two control groups reflects Bandura's (1977) Social Cognitive Theory which emphasizes the importance of skills to go with this knowledge for the development of self-efficacy. Mannings and Wright's (1983) conclusions that self-efficacy expectancies were highly related to mastery would appear to be justified by the current trial finding and the many researchers who have since discussed the importance of issues related to confidence and control during labour and birth (Campero et al., 1998; Cheung, Ip, & Chan, 2007; Fowles, 1998; Gibbins & Thomson, 2001; Goodman et al., 2004; Green, 1999; Hodnett &

Simmons-Tropea, 1987; Klaus, 1998; Koniak-Griffin, 1993; Lothian, 2008; Miller, 2003; van Teijlingen et al., 2003). The findings of the present trial also support the findings of Berentson-Shaw et al. (2009) who concluded that for New Zealand women, perceptions of control as a result of their confidence in both their knowledge and skills increased their sense of self-efficacy and lead them to be more active in managing their labours and deliveries. It is concluded that the intervention assisted mothers in the Intervention Group to develop childbirth skills suited to their individual needs. Their perception of their ability to exercise personal control by using the various skills as required resulted in a greater childbirth self-efficacy.

This finding suggests that a skills-based approach to childbirth preparation, such as the one used in this trial (at a cost of approximately \$80.00NZ), has the potential to be cost-effective, particularly in countries where maternity care is expensive. While maternity care is free in New Zealand, in terms of the use of hospital resources during labour and delivery, an overstretched maternity care budget may see some savings as women develop skills that increase their childbirth self-efficacy and enable them to take greater personal responsibility for their labour and delivery processes. If mothers understand how to use of childbirth skills appropriately for their own situations, they may avoid the use of costly medications and some types of interventions, particularly if stress has become an issue. This may further increase the such a programme's cost effectiveness by potentially reducing maternity care costs.

15.3.2. Mothers' pregnancy anxiety at 36 weeks gestation

The trial did not demonstrate a decrease in pregnancy anxiety for mothers in the Intervention Group. There was no statistically significant difference in change over time for any of the groups nor did groups differ in pregnancy anxiety at 36 weeks gestation.

Research has identified that pregnancy anxiety tends to be more predominant in first-time mothers who have not yet experienced labour and birth (Alehagen et al., 2001; D'Cruz & Lee, 2014). This finding may in part offer some explanation for the present trial's results. While it is also possible that the pregnancy anxiety measure used in this study was not sensitive enough to examine the claims of the intervention programme and its potential for reducing pregnancy anxiety, it cannot be claimed that this alone would explain the non-significant result. This study was not designed to examine the possible physical consequences of pregnancy anxiety. It may be that higher levels of pregnancy anxiety contributed to the number of assisted and surgical deliveries experienced by participants taking part in this project. Further research to examine whether the finding of Gunning (2008), that stress created by pregnancy anxiety could even result in a surgical delivery, would be useful as this study reflected the current high rate of caesarean sections in New Zealand.

15.3.3. Mothers' birth satisfaction

The trial found that both the Intervention Group and the Active Control Group were significantly different from the Passive Control Group for birth satisfaction. Both the Intervention and Active Control Groups reported similar levels of higher birth satisfaction compared to the Passive Control Group. Thus both the skills package and the birth stories increased mothers' birth satisfaction.

These findings possibly suggest that having something to do that increases the understanding of how the mother can manage her labour and delivery, and which offers, or mirrors, coping skills, enhances the possibility of first-time mothers experiencing birth satisfaction. While reading birth stories had not resulted in an increase in childbirth self-efficacy, it may be that mothers had absorbed information about well managed labours. The birth stories may have contained childbirth role models which mothers may have identified with, and used as a basis for their management of their labours and deliveries. Once labour commenced, what they had absorbed was applied effectively and they perceived themselves as in control, with satisfying management and coping skills. This would be in keeping with Social Cognitive Theory which states that when people observe a behaviour and its consequences they can use this observation to model their own behaviour (Bandura, 1977; 1982; 1986). Taking personal responsibility, which results in a perception of control has been identified as a strategy which enhances childbirth satisfaction for first-time mothers (Howarth, 2010; Howarth et al., 2011a). Therefore, both programmes (intervention and birth stories) may have had a positive effect on birth satisfaction through the mechanism of taking personal responsibility. Given the simplicity of providing a book of birth stories, this remains a viable option for increasing birth satisfaction for women.

Qualitative analysis identified three important themes: *owned the process*; *support/supporters*, and *care/carers*; and *feeling safe physically and psychologically*. Mothers who *owned the process* took personal responsibility for seeking out information relevant to their situation and needs, including preparation for labour and delivery. This supported the finding reported by Howarth et al. (2011a). In this study, mothers who took personal responsibility chose their supporters and LMCs with care, making sure of compatibility and professionalism. They also chose the environment for the birth based on their personal requirements. They formulated effective pain management strategies for use during labour and delivery. However, as found in other studies, mothers expressed disappointment if circumstances meant interventions were required (Lobel & DeLuca, 2007; Martin & Fleming, 2011; Rijinders et al., 2008; Shannon et al., 2007; Svardby et al., 2007; Waldenstrom et al., 2004). This was particularly true for mothers in the Intervention Group. While learning childbirth skills enabled her to feel she would be able to *own her process*, if she could not use her skills due to

medical complications, she was perhaps doubly disappointed. It was felt that the programme could have made it clearer that skills were available for any mode of birth. An understanding of this could have resulted in these women feeling less disappointment when their labours and/or deliveries did not go to plan.

Childbirth skills included the development of relationship skills, especially communication skills, so that mothers felt that their supporters and carers would understand their needs and requirements in a respectful manner. Mothers who felt their *support/supporters, and care/carers* lived up to their expectations reported higher birth satisfaction than those mothers who were disappointed in this aspect of their support and/or care during labour and delivery, consistent with other research (Avortri et al., 2011; Campero et al., 1998; Gibbins & Thomson, 2001; Halldorsdottir & Karlsdottir, 1996; Howarth et al., 2011b; Martin & Fleming, 2011; Rijnders et al., 2008; Williams et al., 2010). Mothers in this study wanted to feel understood, not judged, and they wanted to feel that all those involved in assisting them saw them as unique human beings rather than just another patient, or another body, that required the carer's expertise. These findings are consistent with other research (Avortri et al., 2011; Gungor & Beji, 2007; Howarth et al., 2012).

At all stages, the mother wanted to feel well-informed of progress, and when intervention was required, she wanted to fully understand why (Avortri et al., 2011; Fowles, 1998; Gibbins & Thomson, 2001; Glazier et al., 2004; Hodnett et al., 2005). If this was not immediately possible due to an emergency, she wanted clear debriefing after the event. As highlighted in other research, continuity of care, especially from people in which she had an established relationship, was important to her (Glazier et al., 2004; Halldorsdottir & Karlsdottir, 1996; Hodnett, 2002; Hodnett et al. 2005; Howarth et al., 2011b; Rosen, 2004; Sosa et al., 1980; Williams et al., 2010).

Learning childbirth skills involved an awareness of safe practices. *Feeling safe physically and psychologically* was a concern for these mothers. In accordance with other findings, when complications developed mothers participating in this research project still wanted to feel a sense of personal control, especially that they were in control of decision making (Campero et al., 1998; Gibbins & Thomson, 2001; Goodman et al., 2004; Green, 1999; Manning & Wright, 1983; Waldenstrom, et al., 2004). When mothers requiring interventions felt they had managed to retain their sense of personal control, their sense of feeling safe was enhanced.

While women were grateful for the medical interventions that kept them and their babies safe, they still felt a sense of disappointment that their expectations had not been met. The disappointment was softened if the staff involved met the mothers' need for recognition as unique human beings and mothers were treated with respect as well as medical care. They reported greater birth satisfaction than those women who felt they were regarded as just

another patient and another job to be done. This finding was consistent with other research (Avortri et al., 2011; Howarth et al., 2012; Martin & Fleming, 2011).

As Howarth et al. (2013) found, women in this study wanted to feel the hospital had the medical resources as well as the staff to handle any emergencies which may have arisen. Accommodation resources offered by the hospital was another issue for mothers. Women complained about having to share rooms with other women and their babies after they were moved from the delivery suites. This was particularly difficult for women who delivered in the middle of the night when the fathers were sent home. As well as missing the fathers, these mothers felt that precious time for bonding as a family was curtailed. The mothers also worried about how being sent away so soon after the baby's birth would impact on the fathers. This interruption of early family bonding time was not a desirable outcome.

Post hoc regression analyses identified specific factors associated with mothers' birth satisfaction: induction; caesarean; and expectations. These results clarified and confirmed findings from the qualitative analysis as well as other studies (DiMatteo et al., 1996; Garel et al., 1990; Lobel & DeLuca, 2007; Martin & Fleming, 2011; Svardby et al., 2007; Waldenstrom et al., 2004). These findings identified which medical interventions impacted negatively on mothers (inductions and caesareans) and confirmed the disappointment mothers experienced when their expectations of a natural and uncomplicated birth were not met. These findings supported the qualitative analyses that unexpected medical procedures were challenging experiences for the mothers and resulted in them perceiving their birthing experiences more negatively, as has been found to be the case in other research (DiMatteo et al., 1996; Martin & Fleming, 2011; Svardby et al., 2007; Waldenstrom et al., 2004).

The finding that induction decreased birth satisfaction endorsed findings from other studies which also reported that experiencing induction is one of the medical interventions seen as a risk factor for women perceiving their birthing experience negatively (Martin & Fleming, 2011; Svardby et al., 2007; Waldenstrom et al., 2004). Fowles (1998) reported that women who were induced had described how they wished their labours had started naturally, a sentiment shared by women in this study. Those mothers who required caesarean sections reported lower birth satisfaction than those mothers who delivered vaginally. This supports other studies which have reported that surgical deliveries increase the risk of negative psychosocial outcomes for mothers (Carlsson et al., 2015; Lavender et al., 2012; Lobel & DeLuca, 2007).

The third predictor of birth satisfaction was expectations. When the birth went as the mother expected, most importantly that she delivered vaginally, she reported higher birth satisfaction, typical of mothers who had their expectations for uncomplicated childbirth met (Goodman et al., 2004; Manning & Wright, 1983). However, in the present project, this was not

negated by the necessity for assisted delivery using forceps or ventouse. This finding supports other studies that have found that mothers who had a vaginal delivery reported greater birth satisfaction than those who had surgical deliveries (DiMatteo et al., 1996; Waldenstrom et al. 2004). These mothers were able to fully interact sooner with their child, they had skin on skin sooner, and breastfed sooner.

Childbirth self-efficacy and pregnancy anxiety were not associated with birth satisfaction. In contrast, Berentson-Shaw et al. (2009) study reported that stronger childbirth self-efficacy predicted increased birth satisfaction after accounting for obstetric events (medical interventions required). The primary focus of the Berentson-Shaw et al. (2009) prospective observational study was whether childbirth self-efficacy beliefs predicted pain perception and tolerance during labour, obstetric events, and birth satisfaction. The present project examined whether a childbirth/childbirth coaching preparation intervention would predict childbirth self-efficacy beliefs. This difference in focus, in addition to several other methodological differences between the studies may explain why the Berentson-Shaw et al. (2009) results were not replicated.

Nonetheless, the present project's finding of no statistical relationship between childbirth self-efficacy and birth satisfaction was surprising and does not reflect the conclusions of other researchers. Goodman et al. (2004) reported that a woman's childbirth self-efficacy may facilitate or inhibit her ability to cope with her birthing process, thus influencing her perception of childbirth. This lack of concurrence may be due to study focus and methodological issues, or it may be due to the idiosyncrasies of the samples tested. The contradictory findings of the two New Zealand studies require further examination.

15.3.4. Mothers' parenting self-efficacy at six months

The trial tested whether developing the birthing skills outlined in the intervention, for example, the communication and teamwork skills, would result in mothers developing greater confidence in their ability to parent their child. Findings from the trial suggested that the intervention was not a significant factor in parenting self-efficacy at six months for mothers.

However, post hoc regression analysis identified four other covariates which were found to be associated with parenting self-efficacy for the mothers. These were: parenting self-efficacy (at time of birth); medical intervention; touch from others (during labour); and family life satisfaction (six months).

Those mothers in the study who felt greater parenting self-efficacy immediately post birth reported greater parenting self-efficacy at six months. If a woman had previously experienced success in her endeavours it is likely that the attitudes, beliefs and self-images she brought to this new role were those of successful achievement. The personal self-efficacy that

comes from such success may have contributed to the early parenting-self-efficacy described post birth. This finding is in keeping with that of Porter and Hsu (2003) who reported that when a mother initially felt confident in her ability to parent her child, and she perceived that her child was responding well to her efforts, then her parenting self-efficacy was likely to grow. Other studies have supported this in their findings that the mother's perception of herself as a successful parent both enhanced and strengthened her parenting self-efficacy (Bohlin & Hagekull, 1987; Kochanska, 1990; Pridham & Chang, 1985; Salonen et al., 2009).

On the other hand, when a mother's parenting self-efficacy was low post birth, her parenting self-efficacy at six months reflected this lack of confidence. This low parenting self-efficacy is an issue of concern because parenting self-efficacy has been found to be a predictor of both parental and child wellbeing (Bloomfield & Kendall, 2012; Coleman & Karraker, 1998; Jones & Prinz, 2005; Salonen et al., 2009; Seigny & Loutzenhiser, 2009). Other research has found that when the infant was considered irritable and difficult to soothe, the mother reported lower parenting self-efficacy (Ponomartchouk & Bouchard, 2015; Salonen et al., 2009, 2010). However, it must also be considered that when parents demonstrate low parenting self-efficacy, the infants can reflect this by becoming more difficult to soothe (Verhage et al., 2013). Unfortunately, the present trial did not ask parents whether they considered their infants easy or difficult to soothe. As a result, an important question regarding the development of parenting self-efficacy remains unanswered and requires further investigation.

Experiencing a medical intervention during labour and/or delivery was associated with the mother reporting lower parenting self-efficacy. Consistent with other research, the mother may have seen the necessity of an intervention as a failure in her ability to perform as nature intended, resulting in feelings of disappointment, distress and dissatisfaction (Lobel & DeLuca, 2007). These feelings may have influenced her perception of her capabilities to parent her child, resulting in lower parenting self-efficacy. As DiMatteo et al (1996) also reported, mothers in this research project who had caesarean sections waited longer to interact with their new-borns and had less positive initial reactions to their babies. These mothers, as Durik et al. (2000) found, may have been less confident in handling their babies at six weeks postpartum. Such a lack of confidence may have enhanced any difficulties they may have experienced in establishing a positive, interactive and reciprocal relationship with their babies.

Using touch by others during labour as a non-medication pain relief strategy had a negative relationship with parenting self-efficacy. Mothers who relied on touch applied by others, such as massage and acupuncture, reported lower parenting self-efficacy. This unexpected finding may indicate that mothers who used these strategies were more dependent on external sources of pain relief and less dependent on their own inner resources.

This may indicate less overall self-reliance. This, in turn, may have inhibited her development of her sense of herself as a competent parent. But this speculative explanation will require further research to confirm, should this finding be replicated. Family life satisfaction was associated with parenting self-efficacy, consistent with research finding that family functioning and marital satisfaction are associated with parenting self-efficacy (Coleman & Karraker, 1998; Salonen et al., 2009, 2010; Sevigny, & Loutzenhiser, 2009).

15.3.5. Mothers' family life satisfaction at six months

The trial tested whether developing the birthing skills outlined in the intervention would enable mothers to experience an increase in family life satisfaction. The trial found that only the mothers in the Intervention Group changed significantly over time. These mothers showed a decrease in family life satisfaction. However, six months postpartum, mothers in the Intervention Group were not significantly different from mothers in the two control groups, nor were they different at the baseline measure at 24 weeks gestation. *Figure 10.2.* suggests that the change over time for mothers in the Intervention Group was because they were initially more satisfied with family life at 24 weeks gestation, but then (non-significantly) less satisfied at six months compared to the two control groups. It is possible that using the intervention may have created expectations that were not met thus causing disappointment. Also, doing the intervention may have encouraged mothers to expect greater participation from the father at childbirth and in childcare, which may not have happened. The trial did find that fathers engaged significantly less with the intervention than the mothers.

Post hoc regression analysis identified nine covariates which were associated with family life satisfaction at six months for mothers were identified. These included: tertiary qualifications; family life satisfaction (24 weeks gestation); pregnancy anxiety (24 weeks gestation); depression (24 weeks gestation); childbirth distress expectation (36 weeks gestation); labour pain intensity; non-medicated pain management; parenting self-efficacy (six months); and postpartum depression (six months).

Mothers with tertiary qualifications reported lower family life satisfaction at six months. This may reflect the difficulties that highly educated women experience in adjusting to their new role as they take time away from careers to be stay at home mothers, despite their beliefs that staying at home is beneficial for themselves, their child, and their family (Rubin & Wooten, 2007).

When the mother experienced higher family life satisfaction at 24 weeks gestation, she also experienced higher family life satisfaction at six months postpartum. This finding, consistent with other research, suggests that before the child's birth, the mother's perception of all aspects of the couple's life situation, including how the father impacted on her wellbeing

through his personality and behaviour, was already established (Bandura et al., 2011; Melberg, 2006; Saisto, Salmela-Aro, Nurmi, & Halmesmäki, 2001). This finding may reflect those of Stapleton et al. (2012), Defrain and Asay (2007a), Fomby and Cherlin (2007) and Melberg (2006) that when the mother perceived she had the support of her partner during pregnancy, and she was satisfied with the quality of this close relationship, she reported lower maternal distress.

Higher pregnancy anxiety at 24 weeks gestation was linked to lower family life satisfaction at six months. This may suggest that the mothers who experienced pregnancy anxiety, possibly including concerns about her child's welfare, may have continued to be anxious and this may have been reflected in low family life satisfaction. It may be that, as a result of this anxiety, these mothers experienced less control during childbirth which also has been found to affect her perception of the family life (Ayers & Pickering, 2005). Although trait anxiety did not feature as statistically significant in this model, this is not unexpected as pregnancy anxiety has been determined to be a childbirth specific anxiety phenomenon separate from general anxiety (Huizink, 2004; Reck et al., 2013).

Higher depression at 24 weeks gestation predicted higher family life satisfaction at six months. This is a surprising result, but some prior research has found that an unhappier mother-to-be found a purpose in life after baby arrived which brought her happiness (Nelson et al., 2013; Nelson et al., 2014). Consistent with the depression finding, high distress expectation and labour pain were also found to be associated with higher family life satisfaction at six months. These unexpected results are difficult to explain given that prior research has generally found the opposite.

The above three unexpected findings may also signify regression to the mean. The mother may have been fearful of childbirth and over anxious about the changes she was to experience and this was reflected in her depression and the expectation she would experience greater trauma during childbirth. Over time (six months), and once the feared event was in the past, the mother's psychological state may have moved closer to her more normal state featuring less anxiety as she adjusted to her role as mother. Regression to the mean in terms of reductions in stress after pregnancy has been offered as an explanation of effects in a previous study (Duncan & Bardacke, 2010).

When non-medication pain relief strategies were reported as useful, the mother also reported higher family life satisfaction. Women who had been able to manage labour and delivery without using medication may have felt empowered by this experience. That they had been able to control their moment to moment experience of giving birth could have enhanced self-efficacy (Bandura, 1977; Fisher and Fisher, 2000). This may have resulted in more positive attitudes towards the adjustments they were going to have to make to feel successful as parents, with this enhancing their perceptions of their family life.

Parenting self-efficacy at six months was positively associated with family life satisfaction at six months for mothers. Higher parenting self-efficacy at six months indicated higher family life satisfaction at six months. Bandura et al. (2011) reported that parenting self-efficacy contributed to collective family efficacy (working as a team for effective family functioning) which contributed directly to quality of family functioning and thus to life satisfaction. As reported elsewhere, the woman's relationship with the father and their ability to work as a team to maintain the home environment after the birth of the child, plus her ability to engage with her child, may have contributed towards her family life satisfaction (Bandura et al., 2011; Melberg, 2006).

Contrary to the result associated with depression during pregnancy, higher postpartum depression was associated with lower family life satisfaction. This may have indicated that she had had difficulty adjusting to her role of mother but may also have indicated difficulties with an irritable child, relationship issues, or lack of support, previously found to impact on postpartum depression (Ponomartchouk & Bouchard, 2015; Verhage et al., 2013a; 2013b). If she was experiencing difficulties in her relationship with the father, for example, lack of support from or closeness to the father, the new mother could be at risk of suffering from postpartum depression (Iles et al., 2011). It has been found that should a mother develop postpartum depression her ability to maintain her relationship was decreased, resulting in even less satisfaction with her relationship, an important component of family life satisfaction (Burke, 2003; Goodman, 2004; Meighan et al., 1999; Melberg, 2006; Pinheiro et al., 2006; Roberts et al., 2006). Coleman and Karraker (1997) concluded that if the mother's psychosocial wellbeing was compromised, she was not likely to experience a sense of fulfilment and happiness, important components of family life satisfaction.

15.3.6. Mothers' postpartum depression at six months

The trial tested whether by developing the birthing skills outlined in the intervention, mothers would experience a decrease in the incidence of postpartum depression. Having birthing skills as opposed to not having birthing skills was not found to be a significant factor in postpartum depression at six months for mothers.

Post hoc regression analysis revealed six covariates linked to postpartum depression at six months for mothers. These were: trait anxiety; depression (24 weeks gestation); family life satisfaction (24 weeks gestation); other interventions (post-delivery); parenting self-efficacy (six months); and family life satisfaction (six months).

Consistent with prior research, the higher the mother's trait anxiety and depression at 24 weeks gestation, the more likely she was to suffer postpartum depression at six months (Beck, 2002; Heron et al., 2004; Ross, Evans, Sellers, & Romach, 2003). The new challenges that

came with the birth of her child may have added extra pressures which may have compounded her feelings of depression as she struggled to cope, hindering her motivation so that making changes of any kind became even more difficult for the new mother (Melrose, 2010; Reck et al., 2004; Wisner et al., 2002). If the mother was also lacking in social support, not tested in the present project, she may have become even more vulnerable (Leahy-Warren et al., 2011).

It was interesting that pregnancy anxiety was not a statistically significant predictor of postpartum depression at six months. This gives support to the contention that general anxiety and pregnancy anxiety are two separate conditions (Huizink et al., 2004; Reck et al., 2013).

The higher the mother's family life satisfaction at 24 weeks gestation, the higher her postpartum depression at six months. This is another unexpected result. This appears to question the finding by Stapleton et al. (2012) that perceived partner support during pregnancy, suggestive of partner closeness and thus contributing towards family life satisfaction, predicts less maternal distress post birth. However, this finding may also suggest that the mother has struggled to adjust to her new role as mother (Cronin, 2003).

Another surprising result was that when the mother experienced other interventions¹, her postpartum depression was less. Some of these issues, such as retained placenta and haemorrhage, may have been quite frightening for the mother. Some may even have been life threatening without prompt treatment. The mother may have been left feeling thankful and grateful that she survived these traumas and regained her health. This sense of relief and wellbeing that she had survived possibly acted as a protective factor for postpartum depression.

Lower parenting self-efficacy at six months was associated with higher postpartum depression at six months. Because postpartum depression may have made her emotionally unavailable to her child, she may not have experienced feelings of success while mothering her child, thus possibly worsening her depression (Bohlin & Hagekull, 1987; Field, 1988; Nelson, 2004). Again, a vicious cycle may have been created which had the potential to compromise both parental and child wellbeing (Bohlin & Hagekul, 1987; Coleman & Karraker, 1997; Cutrona & Troutman, 1986; Hudson et al., 2001; Jones & Prinz, 2005; Koniak-Griffin, 1993; Rochlen et al., 2008; Rubin, 1984).

Lower family life satisfaction at six months was also associated with postpartum depression at six months. This finding supports research findings that higher family life satisfaction indicated higher subjective wellbeing as happy people have been found to show

¹ consequences of medical issues which affected her post delivery

less mental health issues than those who report unhappiness (Diener & Seligman, 2002; Hellevik, 2003; Lyubomirsky et al., 2005).

15.4. Fathers' results

15.4.1. Fathers' childbirth coaching self-efficacy at 36 weeks gestation

Fathers in this project claimed they wanted to feel they had a role to play and as Johnson (2002) and Turan et al. (2001) also found, they wanted to understand what that role was during childbirth. For fathers in the present trial, there were no statistically significant changes over time. All groups demonstrated a similar level of childbirth coaching self-efficacy at 36 weeks gestation.

This finding may, at least in part, be explained by the failure of fathers to engage with the intervention. This was surprising when fathers commented that they wished they had known what to do. Had fathers engaged with the intervention as much as the mothers did, they may have felt better prepared and subsequently may have reported higher childbirth coaching self-efficacy. Other research suggests fathers will engage with programmes aimed to increase parenting self-efficacy and parenting satisfaction (Hudson et al, 2003), so maybe aiming a programme specifically for fathers may be more successful.

15.4.2. Fathers' pregnancy anxiety at 36 weeks gestation

The trial did not find a statistically significant difference in change over time for any of the groups for fathers for pregnancy anxiety. Nor were groups significantly different at 36 weeks gestation.

As this trial found, Lindgren and Erlansson (2011) also found that fathers did show concern about the possibility that problems would develop during pregnancy, labour and/or delivery. They were concerned about the same issues the mothers were concerned about – that the child develops normally, that the mother would not miscarry, and that the labour and birth would go well. However, it is a possibility that the anxiety felt by their partners may have influenced any anxiety that the first-time fathers experienced.

Again, it is also possible that the pregnancy anxiety measure used in this study was not sensitive enough or appropriate for fathers. Some research suggests a contagion of distress may operate in some couples, leading fathers to mirror the anxiety of mothers (Morse et al, 2000).

15.4.3. Fathers' birth satisfaction

The trial found that both the Intervention Group and the Active Control Group were significantly different from the Passive Control Group for birth satisfaction. Both the

Intervention and Active Control Groups reported similar levels of higher birth satisfaction compared to the Passive Control Group. Thus both the skills package and the birth stories increased fathers' birth satisfaction. This may be explained by the fact that both groups were given something to do that increased their understanding of how they could support the mother's labour and delivery. Each intervention either offered, or *mirrored*, coping skills. Feeling that they were preparing in a positive way to understand the role they could play may have enhanced the possibility that first-time fathers would experience higher birth satisfaction.

However, there is another possible explanation which excludes the possible impact of both the intervention and the birth stories. It may be that the father's birth satisfaction was enhanced by the birthing experience of the mother as mothers in both the Intervention and Active Control Groups reported significantly higher levels of birth satisfaction than mothers in the Passive Control Group. This possibility must be considered, especially as fathers in the Intervention Group did not experience higher childbirth coaching self-efficacy.

Qualitative analysis revealed several important themes. First, the *safety of mother and baby* was understandably of greatest concern for the father. A healthy baby and healthy mother was the outcome desired by all fathers, supporting the finding of Premberg et al. (2011). When the father perceived that mother and baby were receiving the best care available in a safe environment, whether it be hospital or home, the father's perception of his childbirth experience was enhanced. The present finding gives support to the Johansson et al. (2012) study.

Second, *understanding their support role*, being included and involved, was important for birth satisfaction for fathers participating in this project. This need to be involved and treated with respect and empathy was also reported by Johansson et al (2012). When fathers had understood their support role, and had been able to use this understanding to work with the mother throughout her labour and delivery, when professionals had supported, encouraged and facilitated this team work, and when the father had perceived that he had really made a positive difference to the mother's experience of childbirth, he expressed greater childbirth satisfaction than those fathers who struggled to find their role during the labour and delivery. These results find support from the studies by Longworth and Kingdon (2011) who also found men struggled to find their role in childbirth.

Third, if the father perceived the *mother in control and managing the pain* effectively, however she chose to manage it, his degree of satisfaction with his own experience of the birth was enhanced. This was similar for the participants in the Premberg et al. (2011) study. As with the men in the Johansson et al (2015) study, this project found that men struggled with the pain of labour. For the father in the present research project, seeing the mother in pain was difficult, made worse when she was perceived as being overwhelmed by her pain and

consequently in distress. As Chapman (2000) also found, those fathers in the present research project who struggled with witnessing labour pain, and whose partners were given epidurals, felt relief which contributed towards their sense of birth satisfaction. There is a lack of literature which contributes to an understanding of this aspect of father's birth satisfaction and more research is needed.

Fourth, fathers expected good *care and communication during and after birth*. This was a major area of satisfaction for fathers. Typical of findings in other studies, fathers appreciated being informed that progress was normal (Hildingsson et al., 2011; Johansson et al., 2012). When complications arose and interventions were required to ensure the safety of mother and baby, fathers became anxious and worried. Medical personnel who kept the parents fully informed and welcomed their input when decisions had to be made helped with father's anxiety and adaption to changes, a finding consistent with other research (Howarth, Swain, & Treharne, 2012; Johansson et al., 2012; Johansson et al, 2015). Fathers also wanted to be a part of the bonding process between parents and child. When hospital accommodation resources were inadequate, so that they were forced to leave the mother and their baby before the family felt ready to part, distress was experienced by the fathers. This is an area requiring further research and a look at the present policy regarding accommodating the needs of fathers.

Post hoc regression analysis of fathers' data, combined across the three groups, identified seven covariates associated with birth satisfaction after controlling for the effects of the intervention. These included: employment status; pre-birth family life satisfaction; usefulness of antenatal classes; epidural; induction; caesarean; and expectations. These findings broadened and supported the qualitative analyses.

Despite the changes which are occurring in family structures and the growing trend for some men to take on the role of stay at home fathers, for many in the Western World, the father may still be regarded as the primary provider (Barclay & Lupton, 1999). In the USA, census data suggests that 60% of men are the sole or main income earners for the family (Wang et al, 2013). The finding in this project, that fathers employed part-time reported lower birth satisfaction, may reflect the father's concern that, financially, the family was likely to struggle with the decreased income part-time employment brought.

When the father experienced higher family life satisfaction before the birth of his child, his satisfaction with his experience of childbirth was higher. This may reflect other research which has shown the importance of a close relationship between partners (Melberg, 2006). A closer relationship with the mother may have enabled him to participate fully as both parents worked as a team to see their child safely born.

Not all the first-time fathers participating in this project found antenatal classes to be useful in preparing them for childbirth, reflecting the finding of the Spanish study conducted

by Artieta-Pinedo et al. (2010) who found the same for low risk nulliparous women. However, those fathers who did report them as useful also reported higher birth satisfaction. They too mentioned the importance of the information they gained about labour and birth as found by Leerkes and Burney (2007). While other studies have reported the positive impact such classes may have on women's preparation for childbirth and the reduction of interventions, this project found something different for men (Dwyer, 2015; Karimi et al., 2016; Najafi et al., 2016). Of particular importance to fathers was what they learned about parenting. Many new fathers in this study expressed a concern about becoming a parent similar to those expressed in a study by Deave et al. (2008). When antenatal classes provided them with an understanding of how to cope with a new-born, these fathers experienced greater birth satisfaction. This finding supports that of Deave and Johnson (2008) who found that men would have liked greater preparation for the role of parent before the birth, that they wanted detailed information on practical aspects of childcare. The fathers in this project felt the need for greater social support and role models that would have facilitated their paternal identity development, typical of men in other studies (Boyce et al., 2007; Castle et al., 2008; Deave & Johnson, 2008). Antenatal classes that gave fathers the opportunity to establish social networks for support was important to the fathers in the present research project, as also reported by Leerkes and Burney (2007).

Consequently, as found in other research, providing men with more information about parenting and greater social support could be a positive step in assisting first-time fathers to overcome any pre-birth anxieties, thus enabling them to take greater delight in the birth of their children (Boyce et al., 2007; Greenhalgh et al., 2000; Deave et al., 2008). This is different to what was provided in the intervention for fathers and packages which meet their specific needs may need to be developed.

When the mother's labour was induced or the mother experienced a caesarean section, particularly when it was unexpected, the father reported lower birth satisfaction. These results find support in the Swedish study of the birth experiences of 827 fathers conducted by Johansson et al. (2012) that reported that childbirth was a psychologically challenging event for fathers. Boyce et al. (2007) reported that fathers were at risk of increased psychological stress when their partners experienced emergency caesarean sections.

15.4.4. Fathers' parenting self-efficacy at six months

Findings from the trial suggested that group allocation (skills, birth stories or control) was not a significant factor in parenting self-efficacy at six months for fathers. However, analysis identified four factors associated with parenting self-efficacy for fathers: parenting

self-efficacy (at time of birth); expectation of distress (mother's - during labour and delivery); his labour expectations; and family life satisfaction (six months).

For fathers, as for the mothers, greater confidence at the time of birth predicted greater parenting self-efficacy at six months. The majority of the fathers in this study were well educated and had established careers, thus fostering general self-efficacy. This may have set them up for early success as fathers, culminating in the early parenting-self-efficacy they reported immediately post birth. This would appear to have continued, and was reflected in their parenting self-efficacy scores at six months.

The finding, at 36 weeks gestation, that the father expecting the mother to experience high childbirth distress during labour and delivery predicted lower parenting self-efficacy at six months for the father was unexpected. It may reflect the helplessness identified in other studies that some fathers in the present study also reported when they were unsure of the role they would be required to play during childbirth (Chapman, 2000; Deave & Johnson, 2008), but this requires further research to confirm. In contrast, the less the father expected the mother to be distressed during labour, the greater his reported parenting self-efficacy. A greater confidence in his own ability and in the mother's ability to cope during labour may have increased his confidence in both of their abilities to cope as parents.

The more the father's labour expectations were met, the lower his parenting self-efficacy was at six months; this is another unexpected result which has no obvious explanation. It may reflect the influence of unmeasured confounds.

Higher family life satisfaction at six months was linked to higher parenting self-efficacy at six months, as was found for the mothers. This finding suggests that how the father experiences family life is linked to his confidence as a parent, but the direction of this association is unclear.

15.4.5. Fathers' family life satisfaction at six months

The trial found that there was no statistically significant change over time for family life satisfaction for fathers. All groups remained stable and showed no significant differences in family life satisfaction at six months. Post hoc regression analysis did identify six covariates which were associated with family life satisfaction at six months: family life satisfaction (24 weeks gestation); pregnancy anxiety (36 weeks gestation); difficulty witnessing labour pain; medical interventions; parenting self-efficacy (six months); and postpartum depression (six months).

As for mothers, and unsurprisingly, the higher the family life satisfaction 24 weeks gestation, the higher the family life satisfaction at six months for fathers. This finding would appear to reflect the finding reported by Melberg (2006), that quality of family relationships

reflected quality of family life and wellbeing. It may be, as others have found, that parenting has given meaning to their lives and thus enhanced their subjective wellbeing (Nelson et al., 2013; Nelson et al., 2014).

Higher pregnancy anxiety at 36 weeks gestation and higher difficulty in witnessing the mother's labour pain was linked to higher family life satisfaction at six months. As with the other counter-intuitive regression analysis findings the meaning of these results is unclear, and may reflect the influence of unmeasured confounds. Speculatively though, a substantive explanation might be that the eventual delivery of a healthy baby may have led to a sense of family life satisfaction that was all the greater when preceded by a high level of anxiety pre-birth. This possibility will require further research should the present findings be replicated.

When the mother experienced medical intervention during labour/birth, the father reported less family life satisfaction at six months. This was a difficult experience for fathers, especially when they had also commented that they felt helpless and unable to help the mother. It may be, as Deave and Johnson (2008) reported, that when the fathers felt unsure about their role in labour and birth, they felt excluded and anxious about what was happening for the mothers during medical interventions.

Parenting self-efficacy at six months was associated with family life satisfaction at six months for fathers. As for mothers, the lower the parenting self-efficacy, the lower the family life satisfaction. First-time fathers taking part in this project may have felt, as Veskrna (2010) reported, that they were unprepared for the role of parent. They may, in accord with other first-time fathers, have been intimidated by the greater expectation placed on fathers today to be more involved in parenting their children (Barclay & Lupton, 1999; Johnson, 2002; Henwood & Proctor, 2003).

Experiencing higher postpartum depression at six months was associated with lower family life satisfaction at six months for the father. It may be, that like other new fathers, the fathers participating in this project may have found they lacked knowledge, skills, and confidence for parenting, and this may have caused them distress which triggered depression, thus contributing towards lower family life satisfaction (deMontigny et al., 2013; Veskrna, 2010). Experiencing postpartum depression was also associated with lower family life satisfaction for mothers in this study. It has been reported that the most significant risk factor for fathers' postpartum depression would seem to be mothers' postpartum depression because this can impact negatively on family relationships (Burke, 2003; Goodman, 2004; Meighan et al., 1999; Pinheiro et al., 2006; Roberts et al., 2006). The current finding may reflect this, as it may also reflect the following report by Fisher et al. (2015) that depression was also a potential risk factor for conflict between the parents, which could impact on family life satisfaction.

15.4.6. Fathers' postpartum depression at six months

The trial found that being assigned the birthing skills intervention was not a significant factor in postpartum depression at six months for fathers. However, results from the regression analysis reproduced two of the correlates of (antenatal depression and family life satisfaction) fathers' postpartum depression at six months that this and other research has linked to postpartum depression in mothers, plus five other covariates. These were: depression (24 weeks gestation); pregnancy anxiety (36 weeks gestation); family life satisfaction (24 weeks gestation); labour length expectation (36 weeks gestation); non-medicated pain management; other interventions (post-delivery); and family life satisfaction at six months.

The greater the father's depression at 24 weeks gestation, the greater his postpartum depression at six months. This finding gives support to the study conducted by Meighan et al. (1999) which reported that if the father has suffered from depression prior to the birth of a child, the birth of a child may trigger another episode. As other studies have found, these new fathers may have been concerned and overwhelmed by what their role as father would entail and they may have lacked role models and social support (Bartlett, 2004; Condon et al., 2004; Gjerdingen & Center, 2003; Spector, 2006; Thomas & Upton, 2000). Also, the greater the father's pregnancy anxiety at 36 weeks gestation, the greater his postpartum depression at six months. This finding may reflect a personality characteristic of the father that was not tested in this study. Fathers' risk of postpartum depression in New Zealand may benefit from further research that examines these associations between depression and pregnancy anxiety before the birth of the child and postpartum depression after the birth to confirm this finding.

The greater the father's family life satisfaction at 24 weeks gestation, the greater his postpartum depression at outcome. The new father may have felt, as reported by others, that his quality of life, including family life satisfaction, had decreased as a result of difficulties he faced adapting to relationship changes with his partner as well as adapting to fatherhood (Bost et al., 2002; Condon et al., 2004; Iles et al., 2011; Meighan et al, 1999; Veskrna, 2010). This finding may also be related to a decline in marital satisfaction after the birth of a child as reported by Bielawska-Batorowicz and Kossakowska-Petrycka (2006) and Twenge, Campbell, and Foster (2003). Further research to explain this finding could benefit New Zealand first-time fathers and their families.

At 36 weeks gestation, the longer the father expected the mothers labour to be, the less postpartum depression he reported at six months. This is another surprising result. It may be that when the father was expecting the worst and this did not eventuate, his relief contributed towards a positive mood. Another unexpected and surprising result was that when the father perceived non-medication pain management strategies to have greater usefulness, he experienced greater postpartum depression at six months. It may be that the mother's ability

to cope without medical assistance and possibly without assistance from the father left him feeling 'useless' and this feeling of uselessness contributed towards his development of postpartum depression. As Deave and Johnson (2008) reported, fathers participating in this project found it difficult if they felt excluded. There was no relevant literature which shed light on these findings. Consequently, they should be considered with caution unless they can be replicated.

When the mother experienced other interventions², the father's postpartum depression was greater at six months. This contrasted with the mother's result. Her postpartum depression was decreased when she experienced other interventions. It would appear that for fathers, who may have felt that the difficult part was over once the child was delivered, post-delivery issues, such as retained placenta or haemorrhage, may have been particularly unnerving, especially if they occurred as an emergency situation. Fathers reported they struggled when the mother suffered such a birth related trauma. Any intervention at any stage, as reported by Deave and Johnson (2008), could leave fathers feeling excluded and anxious. Not being given the opportunity to discuss/understand/debrief before or after the intervention, found by Deave and Johnson (2008) to be important for future wellbeing, may also have contributed towards postpartum depression. From the present project, it would appear that such experiences, when they go unaddressed, can have long term consequences for fathers.

Higher family life satisfaction at six months was associated with lower postpartum depression at six months for the father. This was also the case for mothers in the present project. If the mother was suffering from postpartum depression, fathers may have become more vulnerable (Bielawska-Batorowicz & Kossakowska-Petrycka, 2006; Burke, 2003; Goodman, 2004; Meighan et al., 1999; Roberts, Bushnell, Collings, & Purdie, 2006). Both parents experiencing postpartum depression may have resulted in conflict within the family which further decreased family life satisfaction, thus exacerbating postpartum depression (Fisher et al., 2015).

15.5. Midwives and work-related stress

After correcting for complications, there was a significant difference between groups for midwives for comparative work-related stress. Comparative work-related stress levels were lower for midwives working with the Intervention Group, compared to the Active and Passive Control Groups. Mussen and Mathewson (2015) reported that midwives in New Zealand identified the stress they experienced in their work as one of the reasons why some

² medical issues post delivery

midwives are walking away from midwifery. The finding of this project suggests that encouraging clients to take on more personal responsibility and to rely on their own inner resources by using childbirth/coaching skills would leave the midwife free to monitor, assist when needed, and take over if complications arose. Clients with the self-efficacy to be more independent in managing labour and delivery may reduce the work-related stress levels that midwives experience when couples are totally reliant on them, even for uncomplicated spontaneous vaginal deliveries. As a result, labour and delivery is likely to become more of a team effort and the development of co-dependency as described by Miller (2003) and Vincent (2008) may be inhibited. This would appear to have the potential to make the role of the LMC more manageable for a profession that feels overworked and undervalued. The inference that a skills-based approach to childbirth preparation would have the potential to reduce work-related stress for midwives is worthy of a more sophisticated research project.

15.6. Limitations and strengths of the components of this research project

Results of this research project should be interpreted in the context of several limitations inherent in each section of the research project. However, while this research project had some limitations, it also contained notable strengths. These strengths make the findings valuable additions to the limited scientific understanding of the experiences of couples having a first child in New Zealand.

15.6.1. Randomized controlled trial

The ethnicity of participants in the trial was not nationally representative. Figures for the major ethnic groups in New Zealand identified in the 2013 census reported that 74% of the population identified with at least one European ethnicity; 15% identified as Māori; 12% identified with at least one Asian ethnicity; 7% identified with at least one Polynesian ethnicity; and 1% identified with at least one Middle Eastern/Latin American/African (MELAA) ethnicity (Statistics NZ, 2015b). However, of the total sample population in this trial, approximately 96.4% of the mothers and 90.8% of the partners identified with at least one European ethnicity, leaving this group overrepresented in this project. Approximately 6.7% of mothers and 7.5% of partners identified with Māori ethnicity; 2.2% of mothers and 1.8% of partners identified with at least one Asian ethnicity; and 1.1% of mothers and 0.7% of partners identified with at least one Polynesian ethnicity, leaving these groups underrepresented in this project. Approximately 2.3% of mothers and 3.9% of partners identified with at least one MELAA ethnicity, leaving this group overrepresented in the project. Data were principally derived from professional people who were Caucasian, employed, and in the higher income bracket.

All data were self-reported. It cannot be guaranteed that all participants answered the questions without influence from others. It also cannot be assumed that all participants completed the post birth questionnaire in the same timeframe. Some parents may have responded to the questionnaire while still experiencing the halo effect, that surge in positive feelings directly after the birth (Simkin, 1992). Others may have responded some weeks after this, once they were more aware of the reality of caring for a new-born. Consequently, questionnaires may have been completed from different perspectives. Also of concern is the impact of traumatic experiences when denial is used as a coping mechanism, or if people wish to present themselves favourably. To also be considered is the finding of Swain-Campbell et al. (2001) and van Teijlingen (2003) that participants completing survey instruments may have had a tendency to maintain the status quo, for example, they may have reported high birth satisfaction regardless. This has the potential to give unreliable results.

The trial used an untested programme presented as a new and different approach to pregnancy, labour, and delivery preparation. There was no measurement of how effectively participants engaged with the programme other than the self-report question asking participants to estimate the percentage of the programme they had completed. Very few mothers or fathers reported they had completed the programme 100 percent. It may be that the programme, in the form used in this trial, appeared overwhelmingly large with an overly complex structure and this may have been discouraging and off-putting for participants with full time jobs and little time to spare. The repetitiveness inherent in some of the manuals, may have discouraged some participants from completing. Because the development of the programme was largely self-funded, the visuals look outdated and resulted in at least one participant feeling that the information about practical skills for childbirth came from the 1950s and was probably not relevant any more. It is a possibility that busy participants took from the programme only what was seen to be of immediate benefit – some of the practical skills for labour and delivery.

Many fathers commented that, while they had really wanted to be there for the mothers during the labour and delivery, they had not known what to do. One father even commented that he felt there was no place for him in the delivery room. The developer of *The Pink Kit Method for Birthing Better*® programme claimed to have addressed this concern of fathers about their role in childbirth by taking the concept of continuous social support a step further and emphasizing that support people have a key role to play as coaches. It is surprising that more fathers in the Intervention Group did not appear to be aware of this opportunity to prepare themselves accordingly, or that mothers in the Intervention Group also appeared to either miss this, or failed to see its potential, or were simply unable to encourage fathers to engage with

the programme. As one mother remarked, her support friend was more interested in the programme than her partner was.

Analysis did demonstrate that mothers engaged significantly more than the fathers but there was no practical way to gauge the depth of either their engagement or their understanding as a result of using a self-teach methodology. Nor were there any practical ways of addressing questions participants had nor misconceptions they may have developed. It is also possible that some parents may have struggled with the self-teach methodology. While a self-teaching approach may work for some people, it may not work for everyone. However, it may be that greater engagement with the programme may have been compromised by, as yet, unidentified pre-existing and unaddressed and unresolved risk factors which overrode the potential benefits of mastering the skills inherent in *The Pink Kit Method for Birthing Better*®. Nevertheless, it is also a possibility that greater engagement, coupled with a deeper understanding of the content of the programme, may have given results which may have supported more of the hypotheses of the present trial.

Participants and/or midwives in the Intervention Group who identified the programme as the trial intervention (despite attempts to anonymise the programme) may have been influenced either positively or negatively by comments made on the internet, or by comments made by other known people using the programme. The comments made by people who have bought the programme are very varied – from very high praise of its effectiveness to harsh criticisms of its inadequacies in presentation. Apart from anonymising the programme itself, no other practical solution was available to control for this.

This trial was theoretically driven after a careful examination of the literature. Well validated measurement tools were chosen whenever possible to increase confidence in any results the trial revealed. A search for relevant literature did not turn up any validated questionnaires that specifically examined a father's concerns about pregnancy and childbirth, childbirth coaching self-efficacy, or birth satisfaction which reflected his own perceptions of his experience. To overcome this lack, permission was gained from instrument developers to adjust the wording in the mother's measures previously found to have good validity and reliability. However, ideally, measures developed specifically for fathers, demonstrating an understanding of the psychological issues fathers contend with through the processes of pregnancy, labour and delivery, may have been more appropriate. The lack of research surrounding men's experiences meant that developing such specific instruments was beyond the scope of this project. However, having initially considered these potential difficulties, it was pleasing to note that Cronbach's alphas suggested the adapted measures were a good fit.

The RCT also had several strengths. By randomly assigning participants to one of three groups, the trial minimised allocation bias in treatment assignment by keeping other variables

constant. At the commencement of the trial, testing of demographic variables and five of the six outcome measures reinforced that groups were similar in terms of important demographic characteristics and outcome measures. This reinforced that randomization had been successful and that groups did not initially differ significantly on any of the outcome measures, adding to confidence that differences between experimental groups at outcome would reflect the impact of the intervention, thus adding to the credibility of any findings (Simon, 2001; Sullivan, 2011).

Rather than participants being limited to one small demographic region in New Zealand, which reduced the potential for generalizability, taking the project national resulted in the enrolment of participants from all regions of New Zealand. Participants came from both rural and urban areas, with the majority coming from the main urban areas (Auckland, Hamilton, Wellington, Christchurch and Dunedin). Incorporating internet recruitment strategies developed for this project and mapping these provides useful information for others wanting to conduct studies targeting the same population demographic.

There was good retention of participants showing a commitment by participants to sharing their experiences of pregnancy, childbirth and early parenting. Of the 182 mothers who completed Questionnaire One, 157 completed Questionnaire Four, giving a retention rate of 86%. Of the 174 fathers who completed Questionnaire One, 143 completed Questionnaire Four, giving a retention rate of 82%. This compares well to other published studies such as the RCT intervention study promoting positive motherhood by Salmela-Aro et al. (2012) with a retention rate of 57%; the Ip, Tang, and Goggins (2009) RCT intervention study using an educational intervention to improve women's ability to cope with childbirth with a retention rate of 69.3%; and the Toohill et al. (2014) RCT intervention study of a psycho-education intervention by midwives aimed at reducing childbirth fears with a 58% retention rate. The Kempler, Sharpe, Miller and Bartlett (2016) systematic review of nine RCT intervention studies examining the effectiveness of psychosocial sleep interventions to improve infant sleep or maternal mood in the postnatal period reported a published study with a retention rate as low as 19%.

This project was the first to examine the effectiveness of a skills-based approach to preparing for labour, delivery, and early parenting using *The Pink Kit Method for Birthing Better*®. The trial provided the first evidence that such a novel approach to childbirth preparation could have benefits in increasing childbirth self-efficacy for first-time mothers and birth satisfaction for both first-time mothers and first-time fathers. It also provided the first evidence that use of such a programme by clients has the potential to reduce the work-related stress levels experienced by midwives in private practice.

15.6.2. Qualitative analyses

As with other qualitative analyses, the analyses of mothers' and fathers' comments on their experiences of childbirth were exploratory. The analysis was time consuming, but a great deal of care was taken, including scrutiny of data and results by a second analyst, to minimise researcher bias.

An interview methodology which would have allowed the interviewer to observe the participant and encourage the participant to enlarge on comments made would have been helpful and was considered. However, the nature of this project, a desire to encourage participants to remain in the project by not overwhelming them with demands for their time at a very busy point in their lives, the difficulty formulating an acceptable selection method (some participants had already committed significant time to completing the questionnaires), and lack of available resources made this approach unrealistic. Consequently, the possibility that important issues did not receive sufficient examination must be considered.

These analyses were limited to first-time parents. Parents who are having subsequent children may have had different perspectives of the birth experience. There was also little representation from socioeconomically deprived groups in this project, which could have added a different perspective as Redshaw and Henderson (2013) had reported there were considerable sociodemographic variations in partner support in a large UK study.

However, participants in this project were articulate and able to express themselves clearly. Response bias was not an issue for this analysis as it was concerned with individual perception, rather than the necessity of drawing objective conclusions. All types of labours and deliveries were experienced, from very short just made it to the hospital, to difficult labours that were long and exhausting, culminating in traumatic and dramatic emergency caesarean sections with no time to scrub in; from home births that progressed without any issues, to those rushed to hospital for emergency procedures. Consequently, insights into the birth experiences of both parents were revealing. In particular, the insights gained into fathers' experiences of childbirth in this project provided much needed information new to the knowledge base for maternity in New Zealand, and elsewhere. Such information has the potential to be of assistance not only in understanding his experience and needs at this time in his life, but also in developing measurement tools and interventions that fit well with the father's unique experience of the birth of his child.

15.6.3. Post hoc regression analyses

The data for the post hoc regression analyses were subject to several limitations. The sample was a self-selected convenience sample of New Zealand parents expecting their first child. Consequently, psychological, social, and ethnic differences between those who chose, or

did not choose, to take part may have been an issue. The unavailability of validated measurement instruments for fathers and the postal self-report method of data collection may also have created issues. Despite controlling for the effect of the intervention, it also cannot be guaranteed that there were no other unidentified confounds which this project failed to examine and which may have affected the findings of these analyses.

However, these analyses had a number of strengths. They were also theoretically driven after a careful examination of the literature, and the study of the qualitative data collected for this project. This was a prospective project thus reducing the risks of inaccurate memory which can be an issue with retrospective studies. This also allowed the direction of any predictions to be associations to be identified for most findings. It was the first project in New Zealand to specifically explore for the impact of theory based predictors/associations between as yet unidentified covariates on birth satisfaction, parenting self-efficacy, family life satisfaction and postpartum depression for both first-time New Zealand mothers and first-time New Zealand fathers. The sample was sufficiently large so that analysis was able to detect any significant effects that might exist. Consequently, these analyses added greater depth to the findings of the trial. They also extended the body of knowledge by the identification of potential factors creating risk for birth satisfaction and early parenting difficulties (including parenting self-efficacy, family life satisfaction, and postpartum depression). These analyses provided valuable information which could be used to develop interventions that could be used to contribute towards family wellbeing.

15.6.4. Midwife data analysis

Limited data were collected from midwives caring for clients engaged in a between-subjects intervention questionnaire-based trial. Midwives were not randomly assigned to groups, but were grouped according to the grouping of their clients, so it was not possible to ensure there were no differences in personal characteristics which could have impacted on results. It was outside the scope of this project to conduct baseline measures which could have given confidence that there were no differences in groups which would impact on outcome measures. Despite this limitation, because clients chose their midwives to suit their own needs, and because clients did not differ in personal characteristics nor the relevant measures at baseline, it was assumed that midwives would also be similar in personal characteristics to their clients, as compatibility would have been important to the clients when choosing their midwives. One hundred and four midwives participated in the project (70% response rate) giving sufficient numbers to maintain statistical power.

15.7. Directions for future research

15.7.1. Rationale for further exploration

This research project revealed that, with the level of engagement with the intervention low, many of this research project's results cannot be considered conclusive. The effectiveness of a skills-based approach to childbirth preparation for both parents is still unclear. Using a more sophisticated methodology to examine the impact skilled parents have on the midwives' work-related stress could also enlarge upon this project's limited findings. The project also identified other issues related to the outcomes birth satisfaction, parenting self-efficacy, family life satisfaction and postpartum depression many of which are unexplained and under-researched.

15.7.2. Replication of this research project

The results of this project provide groundwork for further exploration of the effectiveness of childbirth/coaching skills. The results of the trial suggest that the version (2010) of the intervention programme used in this research project would benefit from considerable editing and restructuring to encourage greater engagement. At this point in time, the concepts of childbirth/coaching skills are not a part of the New Zealand traditional birthing perspective and skills are advocated by only a small minority of New Zealand midwives (Vincent, 2008). For future research, to engage the attention of potential participants, the programme would benefit from being presented in a way that would attract and hold interest. Offering an easily followed structure which is brief and to the point would be a positive step in improving this product. For example, reformatting the material into modules which follow the chronological development of the pregnancy would give parents a structure easily followed. Editing the programme to remove repetition would reduce the time required to complete any reading required. Updating and improving the visual components of the programme would encourage parents to see it as relevant to their time and themselves. Consequently, it would be useful to replicate this project with a clearer, more concise, and better structured version of the programme or a programme generated by the researchers for comparison.

It is interesting that fathers tended to engage more with the birth stories booklet provided for the Active Control Group. It may be that this was because this booklet was structured so that parents could select the types of birth they wished to read. It may also be that fathers were more interested in finding out how parents related their experiences of childbirth than aware of the part they could play as coach. While the intervention provided a limited number of birth stories they did not cover all modes of birth. Working such stories into the programme, and using these stories to demonstrate the skills, may also encourage greater

engagement. Thus, the researchers might be well placed to develop more effective interventions.

A more directed approach may also be appropriate. While a self-teach approach may be useful for insuring the programme reaches as many people as possible, it is possibly an inhibiting feature for some people. A group approach with a teacher familiar with the concept and skills to provide guidance as couples worked through the programme, similar to the approach taken by antenatal classes in New Zealand, but available much earlier in the pregnancy, could offer more direction and ensure greater engagement. Having support mechanisms in place could help to hold parents' interest, particularly when questions arose. An online course which participants could work through could also offer more direction and ensure greater engagement. An online support group, plus frequently asked questions and help resources, would give support to parents who may be struggling with some aspect of the programme, or simply wanted to talk about it with other parents. The structure provided by such an approach may be more attractive to some participants than a self-teach methodology which gives no feedback and answers no questions.

15.7.3. Questions for further exploration and future research

The trial, qualitative, post hoc regression, and midwives' data analyses all highlighted areas that may benefit from further research, both explorative and causative. Some of the many questions which have arisen from this project include:

- What are the psychological processes men must work through from the time they learn of the mother's pregnancy to achieve their paternal identity? How can an understanding of these processes be encapsulated into a skills-based educational programme that will encourage greater engagement from fathers?
- It is possible that not all people respond well to self-teach methodologies. Would replication of this trial using a more directed teaching approach, such as group classes or online courses, where questions could be answered and feedback provided, encourage greater engagement with the programme and, consequently, would this deliver results different from those of this project?
- Although this project did not find that childbirth/coaching self-efficacy predicted birth satisfaction for either parent, were there other confounds that this project did not measure that may explain this finding, for example psychological characteristics such as optimism/pessimism?
- Although the birth stories booklet did not impact on childbirth self-efficacy, it appeared to be a factor influencing birth satisfaction for both parents. Is there an important educational benefit in providing first-time parents with birth stories

depicting a variety of labours and births? If so what is the mechanism behind the effectiveness of birth stories? How could this be used to increase childbirth/coaching self-efficacy?

- Mothers in the Intervention Group reported a statistically significant decrease in family life satisfaction over time but were not significantly different compared to the mothers in the Active and Passive Control Groups at either the baseline time point or the outcome time point. How is this explained? Was it a statistical anomaly or was there some other, as yet unidentified, explanation?
- The midwives' data was collected using a visual analogue scale. Would a more sophisticated research project examining the effectiveness of skills-based childbirth/coaching preparation on midwife work-related stress replicate and enlarge upon the findings from the analysis of the VAS data collected for this research project?
- Why did pregnancy anxiety not show the expected statistically significant decrease concurrent with the significant increase in childbirth self-efficacy for mothers in the Intervention Group? What other, as yet unidentified, factors may have influenced this outcome? Does the intervention programme fail to address some issue or issues relevant to the reduction of pregnancy anxiety? Would the childbirth/coaching education programme be improved by addressing such factors? Is this a reflection of the culture surrounding birth and antenatal education in New Zealand?
- Why did the post hoc analyses not replicate the finding by New Zealand researchers Berentson-Shaw et al. (2009) that higher childbirth self-efficacy, once medical interventions were corrected for, would predict birth satisfaction?
- Why did the correlated relationship between family life satisfaction and postpartum depression hold constant in the regression analyses of both dependent variables for both parents? Families in New Zealand may benefit from further research that examines this association.

15.7.4. New areas of research

The results of this project provide a foundation for the further exploration of the experience of New Zealand men during their partner's pregnancy and childbirth and the psychological processes they work through as they adjust to fatherhood. While previous research makes interesting conclusions, such as the partner's need for information and social support during the mother's pregnancy and childbirth, this research is based outside New Zealand. It is also limited, as little attention has yet been given to either the father's experience of the birth of a first child or the adjustments he must make to parent effectively and happily.

Lack of data on men's psychosocial experiences and needs diminishes our ability to thoroughly understand any implications negative experiences he may have leading up to, during, and after the birth of his first child, could have on his wellbeing and consequently the wellbeing of his family. Understanding is the first step in providing what he needs to support positive experiences related to the birth of his first child and adjustment to fatherhood. The present project indicates that his adjustment to parenthood is complex and that further research would help to clarify both his experiences and his needs. New Zealand would be an ideal country in which to make a serious study of these needs. It has a unique system of midwife driven maternity care which provides the potential environment for addressing the needs that men have expressed to be involved in the pregnancy and birth of their child in a contributory role.

Lack of research into the father's experiences of pregnancy, labour and childbirth means there is an absence of measurement tools available to measure his experiences. While Cronbach's alphas and comments made by fathers indicated the adjusted measurement tools used in the present project were a good fit, further research to validate these tools would give a clearer idea of their potential usefulness and what may or may not need to be altered to give the tool maximum usefulness.

The qualitative analyses identified areas that had not been incorporated into the quantitative trial questionnaires. An example which may be having an unknown but negative impact on new families is sending fathers home during the night because the accommodation facilities in hospitals are not available for them to stay with the mother and new-born. The fathers in this project who experienced this reported how devastated they felt about being separated from their new families so soon after the birth and before they had had an opportunity to initiate bonding. The potential for this to impact on father wellbeing and family bonding necessitates consideration.

15.8. Conclusion

With the impending birth of a first child, parents have hopes and expectations about how labour and delivery will progress, but these are often accompanied with anxieties about what might possibly go wrong as well as how they will cope as parents. Traditional childbirth preparation may not provide them with sufficient information to answer all their questions and develop skills which would create strong childbirth/childbirth coaching self-efficacy. Inadequate preparation for labour and delivery may result in the couple lacking childbirth self-efficacy and consequently being overly dependent on professionals. Because research suggests that childbirth self-efficacy has the potential to impact on other aspects of giving birth and early family life, this project aimed to address the issue of childbirth/childbirth coaching

self-efficacy for both parents using the intervention *The Pink Kit Method for Birthing Better*®. The trial hypothesized that by developing skills parents would experience increased childbirth/coaching self-efficacy. This, in turn, would reduce pregnancy anxiety, increase birth satisfaction, parenting self-efficacy and family life-satisfaction, while at the same time decreasing the incidence of postpartum depression.

Mothers in the Intervention Group demonstrated a greater increase in childbirth self-efficacy over time, and a higher level of childbirth self-efficacy at the 36 weeks gestation, compared to the other two groups. This suggests that a skills-based childbirth preparation programme such as the one used in this project makes positive contributions to childbirth preparations for mothers. In an uncomplicated spontaneous vaginal birth, she was able to take control of her process and this had beneficial effects in the satisfaction she felt with her achievement. This was reflected in the statistically significant positive effect for birth satisfaction for mothers in the Intervention Group. Fathers in the Intervention Group also reported higher birth satisfaction. This finding may reflect that the father had discovered his role during childbirth or had felt encouraged by the mother's coping skills. However, it may also be that the mother's experience of high birth satisfaction impacted on the fathers' experience as well. Interestingly, this effect of birth satisfaction was not confined to the Intervention Group alone. Both the Intervention and Active Control Groups reported significantly higher birth satisfaction than the Passive Control Group. Therefore, both the intervention programme and the birth stories booklet may have had a positive effect on birth satisfaction through the mechanism of taking personal responsibility (Howarth et al, 2011a).

That fathers in the Intervention Group did not demonstrate a similar increase in childbirth coaching self-efficacy was a surprising and disappointing result, especially when fathers reported post birth that they had been unsure of their role in childbirth. This may, at least in part, be explained by the finding that fathers had engaged less with the intervention than had the mothers. A number of participants suggested that there were issues with the presentation and design of the material communicated in the intervention. The programme was seen as long, repetitive, at times confusing, and visually unattractive. They may also have disliked the self-teach methodology when no opportunity was given for questions and feedback. A better structured and designed programme which allowed for feedback may have encouraged greater engagement. Another consideration was the need to understand not only the pressures new fathers may experience as they wait for the birth of a first child, but also the psychological process fathers go through as they adjust to the concept of becoming a father. Adapting the programme to better address the needs of fathers as expressed by fathers, may encourage greater engagement, more so than was evident in this research project.

Higher childbirth self-efficacy was hypothesized to have a positive impact on other factors, including pregnancy anxiety, parenting self-efficacy, family life satisfaction, and postpartum depression. Other studies had reported that increased confidence in the ability to manage childbirth has impacted positively on these outcomes (Beck & Siegel, 1980; Byrne et al., 2014; Ip et al., 2009; Manning & Wright, 1983; Sieber et al., 2006). However, in this research project, participants in the Intervention Group showed no advantages over the other two groups for these outcomes. Indeed, mothers in the Intervention Group reported a significant decrease in family life satisfaction over time compared to the mothers in the two Control Groups, although there were no significant differences between groups at either 24 weeks gestation or six months postpartum. The significant decrease in family life satisfaction for mothers in the Intervention Group was contra to expectations, surprising, and difficult to explain, especially as no differences between groups had been found at either time point.

A qualitative analysis of comments provided a valuable insight into giving birth in New Zealand. The analyses established several areas within the current system of maternity care which may need review and improvement. For example, some women reported that they felt underprepared resulting in a sense of overwhelm when labour became difficult. Many mothers were disappointed that antenatal classes had not better prepared them for this and for natural labour and delivery in general. While childbirth preparation has been found to impact on birth satisfaction for mothers, the analysis of the father's data indicated that, as Friedewald (2007) suggested, preparation is also an area of concern for fathers (Berentson-Shaw et al., 2009; Green, 1999; Howarth et al., 2011a). In common with other Western countries, more and more fathers are becoming an integral part of the childbirth process in New Zealand. This project, in accord with other research, also suggested that how fathers experienced the pregnancy and birth of their child may have impacted on their psychological wellbeing, resulting in postpartum depression and lack for family life satisfaction (Fenwick, Bayes, & Johansson, 2012; Friedewald, 2007; Longworth & Kingdon, 2011). Reviewing and improving current maternity policies and antenatal education programmes and filling in the gaps in learning as identified by mothers and fathers in this project could enable both parents to feel better prepared for childbirth.

The qualitative analysis of fathers' data also identified unexpected and potentially noteworthy issues for further consideration and future research. While many of these issues were about the care and safety of mothers, fathers also reported a strong need to be involved and actively included in the mother's pregnancy, labour, and delivery of their child, as well as a need to know how to parent a new born. Such issues relevant to the father's experience need to be prioritized in maternity care.

Post hoc regression analysis identified other variables which impacted on the four post birth trial outcomes. These post hoc analyses gave valuable insights into those factors which impacted on birth satisfaction, parenting self-efficacy, family life satisfaction, and postpartum depression for New Zealand mothers and fathers. The analyses also identified some early markers, for example, depression and low family life satisfaction, before the birth of a child, which may portend a poor outcome. These findings indicated the interrelatedness of many factors.

Professional independently practising midwives in New Zealand, like their counterparts overseas, are also finding that when clients are overly dependent on them, their stress levels increase. After correcting for labour and delivery complications, this project found that those midwives who worked with participants in the Intervention Group reported less work-related stress working with these participants than they generally experienced when working with their clients in their private practices. This finding suggests that when clients are well prepared with sufficient skills to enable them to take more responsibility for their own processes, some of the pressures midwives have reported when working with overly dependent clients were reduced.

This research project asked whether a new approach to childbirth preparation, one not available in any formal New Zealand antenatal educational programme at the time this project was commenced, would enhance the experience of New Zealand couples becoming first-time parents through increasing childbirth self-efficacy. It also sought to better understand the experiences of New Zealand couples becoming first-time parents, not only from the mother's perspective but also from the father's perspective. In its totality, this research project provides valuable insights into factors which affect individual wellbeing when a new family is created with the birth of a first child. It is hoped that this research project will encourage further research into these areas and the questions it raised, with the aim of understanding the challenges faced by couples having a first child in New Zealand. It is further hoped that such research will encourage the development of interventions to assist families according to their needs. An early and effective monitoring system with appropriate interventions which take a holistic approach could give much needed support to families struggling to make the adjustments to the changes the birth of a first child brings into their lives. Such a holistic approach could provide long term effectiveness. It is hoped that, as a result, all families in New Zealand will have the opportunity to develop as psychosocially strong and healthy functioning units, thus providing a strong cornerstone for New Zealand society.

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Appendix A: Ethics and Maori consultation

A1: Ethics approval

A2: Maori consultation

17 March 2011

Dr Nicola Swain
Dunedin School of Medicine
University of Otago
PO Box 913
Dunedin

Dear Dr Swain

Re: Ethics ref: **LRS/10/11/052** (please quote in all correspondence)
Study title: Giving birth for the first time: the impact of birth skills preparation on parents, midwives and medical interventions in New Zealand
Investigators: Dr Nicola Swain, Associate Professor Kate Scott, Ms Anne Howarth

This study was given ethical approval by the Lower South Regional Ethics Committee on the 17th of March 2011.

Approved Documents

- Study Protocol – Giving birth for the first time in NZ 10-11-05, V1
- Information Sheet for Parents, 11-01-27, V2
- Consent Form for parents, 11-01-27, V2
- Mother's Questionnaire 1, 10-11-18, V1
- Mother's Questionnaire 2, 10-11-18, V1
- Mother's Questionnaire 3, 10-11-18, V1
- Mother's Questionnaire 4, 10-11-18, V1
- Father's Questionnaire 1, 10-11-18, V1
- Father's Questionnaire 2, 10-11-18, V1
- Father's Questionnaire 3, 10-11-18, V1
- Father's Questionnaire 4, 10-11-18, V1
- Contact Details Form, 10-11-08, V1
- Help and Social Agencies List, 10-11-17, V1
- Advertisement, 10-11-05, V1

This approval is valid until 30 November 2013, provided that Annual Progress Reports are submitted (see below).

Access to ACC

For the purposes of section 32 of the Accident Compensation Act 2001, the Committee is satisfied that this study is not being conducted principally for the benefit of the manufacturer or distributor of the medicine or item in respect of which the trial is being carried out. Participants injured as a result of treatment received in this trial will therefore be eligible to be considered for compensation in respect of those injuries under the ACC scheme.

Amendments and Protocol Deviations

All significant amendments to this proposal must receive prior approval from the Committee. Significant amendments include (but are not limited to) changes to:

- the researcher responsible for the conduct of the study at a study site
- the addition of an extra study site
- the design or duration of the study
- the method of recruitment
- information sheets and informed consent procedures.

Significant deviations from the approved protocol must be reported to the Committee as soon as possible.

Annual Progress Reports and Final Reports

The first Annual Progress Report for this study is due to the Committee by 17 March 2012. The Annual Report Form that should be used is available at www.ethicscommittees.health.govt.nz. Please note that if you do not provide a progress report by this date, ethical approval may be withdrawn.

A Final Report is also required at the conclusion of the study. The Final Report Form is also available at www.ethicscommittees.health.govt.nz.

Requirements for the Reporting of Serious Adverse Events (SAEs)

For the purposes of the individual reporting of SAEs occurring in this study, the Committee is satisfied that the study's monitoring arrangements are appropriate.

SAEs occurring in this study must be individually reported to the Committee within 7-15 days only where they:

- are *unexpected* because they are not outlined in the investigator's brochure, and
- are not defined study end-points (e.g. death or hospitalisation), and
- occur in patients located in New Zealand, and
- if the study involves blinding, result in a decision to break the study code.

There is no requirement for the individual reporting to ethics committees of SAEs that do not meet all of these criteria. However, if your study is overseen by a data monitoring committee, copies of its letters of recommendation to the Principal Investigator should be forwarded to the Committee as soon as possible.

Please see www.ethicscommittees.health.govt.nz for more information on the reporting of SAEs, and to download the SAE Report Form.

We wish you all the best with your study.

Yours sincerely



Jacqui Bartlett
Administrator
Lower South Regional Ethics Committee
Email: lowersouth_ethicscommittee@MOH.govt.nz

NGĀI TAHU RESEARCH CONSULTATION COMMITTEE

TE KOMITI RAKAHAU KI KĀI TAHU

14/12/2010 - 53

Thursday, 16 December 2010

Dr Swain
Psychological Medicine
Dunedin

Tēnā koe Dr Swain

Title: Giving birth for the first time: The impact of birth preparation on parents, midwives and medical interventions in NZ.

The Ngāi Tahu Research Consultation Committee (The Committee) met on Tuesday, 14 December 2010 to discuss your research proposition.

By way of introduction, this response from the Committee is provided as part of the Memorandum of Understanding between Te Rūnanga o Ngāi Tahu and the University. In the statement of principles of the memorandum, it states "Ngāi Tahu acknowledges that the consultation process outlined in this policy provides no power of veto by Ngāi Tahu to research undertaken at the University of Otago". As such, this response is not "approval" or "mandate" for the research, rather it is a mandated response from a Ngāi Tahu appointed committee. This process is part of a number of requirements for researchers to undertake and does not cover other issues relating to ethics, including methodology; they are separate requirements with other committees, for example the Human Ethics Committee, etc.

Within the context of the Policy for Research Consultation with Māori, the Committee base consultation on that defined by Justice McGechan:

"Consultation does not mean negotiation or agreement. It means: setting out a proposal not fully decided upon; adequately informing a party about relevant information upon which the proposal is based; listening to what the others have to say with an open mind (in that there is room to be persuaded against the proposal); undertaking that task in a genuine and not cosmetic manner. Reaching a decision that may or may not alter the original proposal."

The Committee considers the research to be of importance to Māori health.

As this study involves human participants, the Committee strongly encourage that ethnicity data be collected as part of the research project. That is the questions on self-identified ethnicity and descent, these questions are contained in the 2006 census.

The Committee suggests contacting Nga Maia o Aotearoa Me Te Wai Pounamu, the Māori Midwives Association to make them aware of this project.

The Committee suggests dissemination of the research findings to Māori health organisations, including Nga Maia o Aotearoa Me Te Wai Pounamu, regarding this study.

We wish you every success in your research and the Committee also requests a copy of the research findings.

This letter of suggestion, recommendation and advice is current for an 18 month period from Tuesday, 14 December 2010 to 14 June 2012.

The Ngāi Tahu Research Consultation Committee has membership from:

Te Rūnanga o Ōtākou Incorporated
Kāti Huirapa Rūnaka ki Puketeraki
Te Rūnanga o Moeraki

NGĀI TAHU RESEARCH CONSULTATION COMMITTEE

TE KOMITI RAKAHAU KI KĀI TAHU

The recommendations and suggestions above are provided on your proposal submitted through the consultation website process. These recommendations and suggestions do not necessarily relate to ethical issues with the research, including methodology. Other committees may also provide feedback in these areas.

Nāhaku noa, nā



MR MTRCC

Mark Brunton
Kaitakawaenga Rangahau Māori
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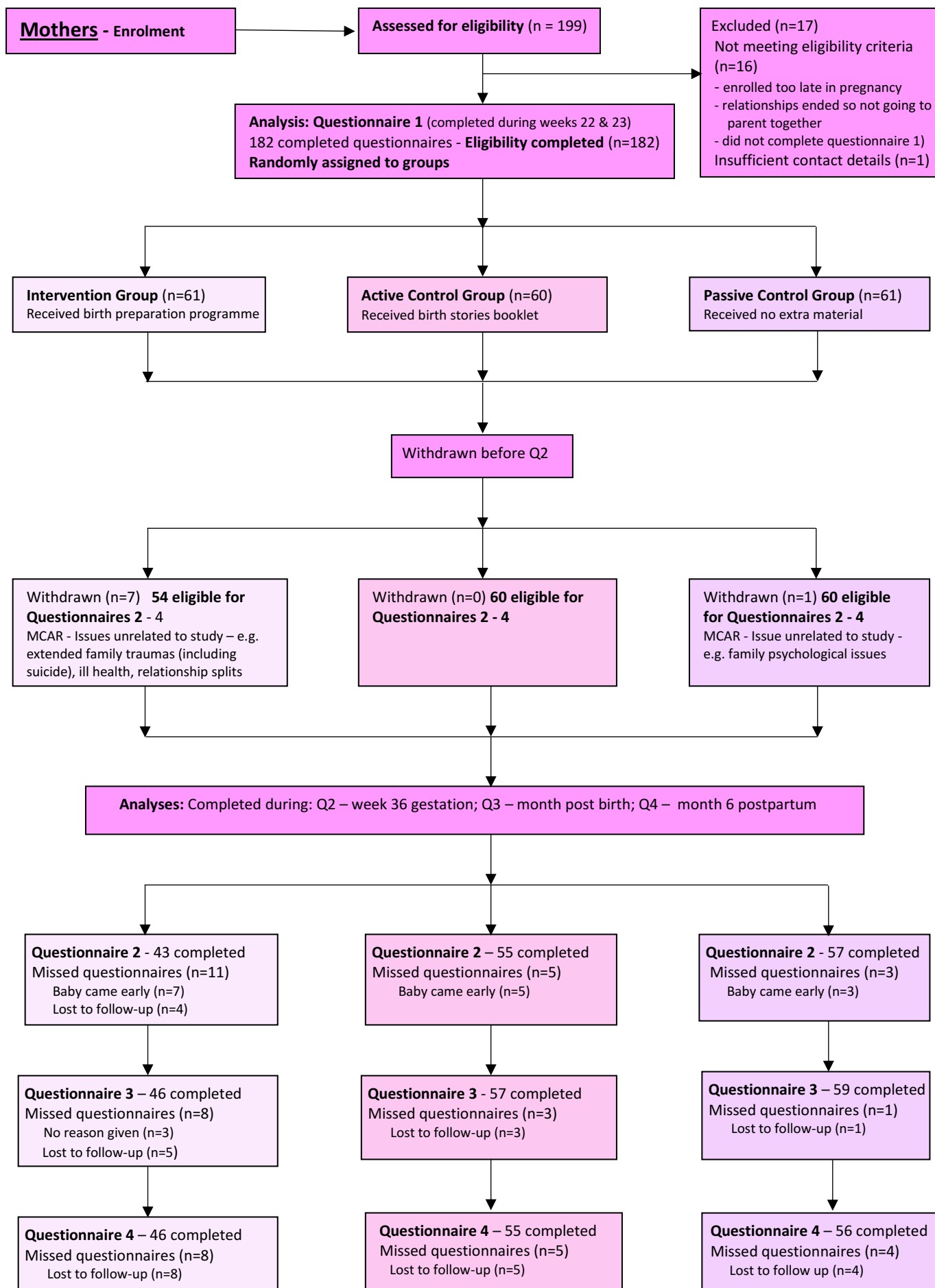
The Ngāi Tahu Research Consultation Committee has membership from:

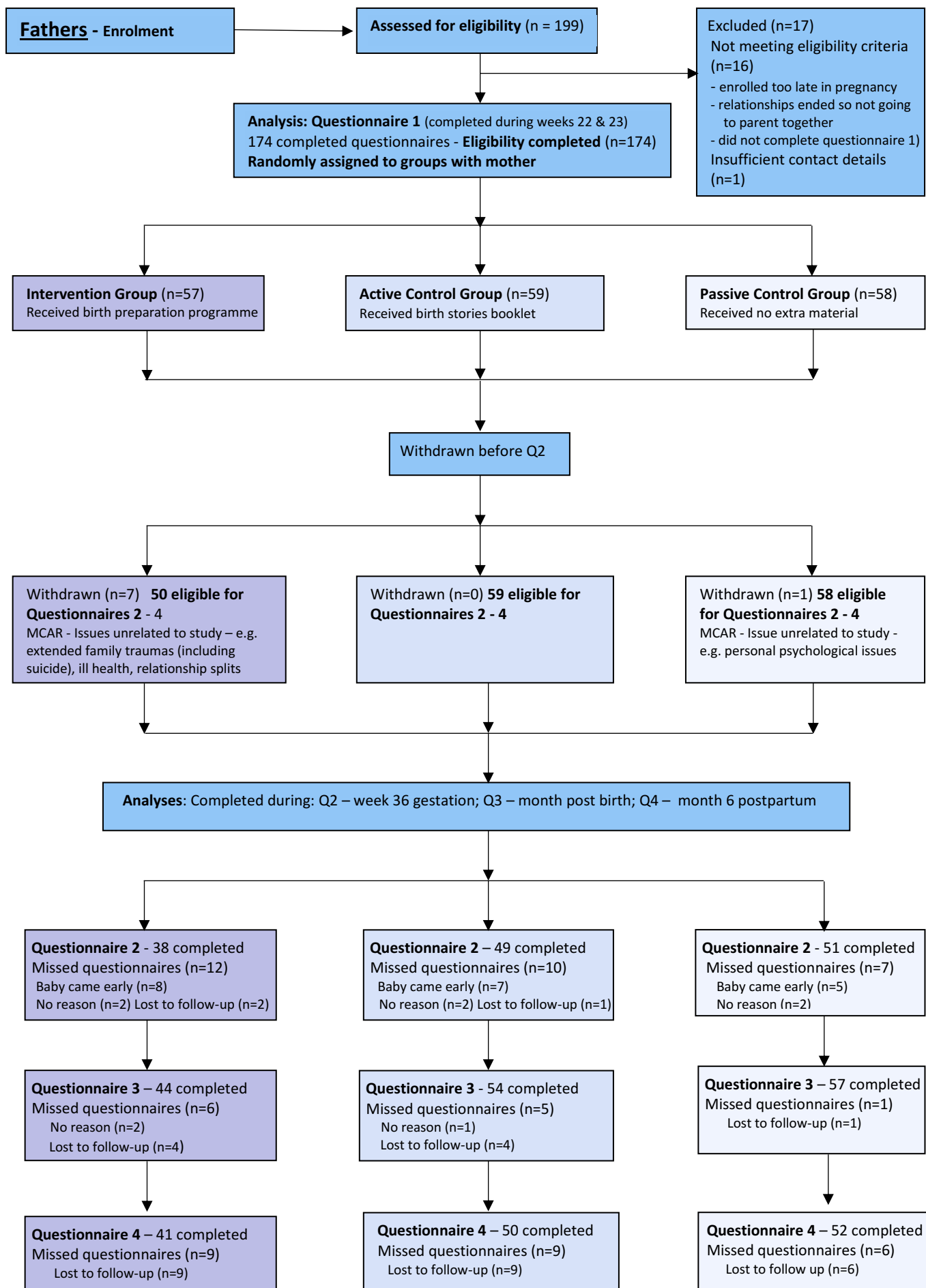
Te Rūnanga o Ōtākou Incorporated
Kāti Huirapa Rūnaka ki Puketeraki
Te Rūnanga o Moeraki

Appendix B: Consort Flow Charts showing enrolment, eligibility completion, randomised allocation to grouping¹, withdrawals, and completion of questionnaires for mothers and fathers.

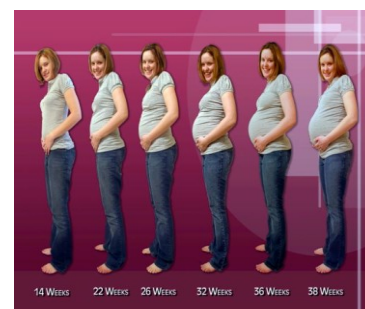
Schulz KF, Altman DG, Moher D, CONSORT Group. (2010). CONSORT 2010 Statement: Updated Guidelines for Reporting Parallel Group Randomised Trials. *PLoS Med*, 7, e1000251.

¹ With online questionnaires, mothers' and fathers' questionnaires were returning at different times, unlike the return of the paper questionnaires. Consequently, random group assignment for the couple was made on the return of the mother's questionnaire.





Appendix C: Example of poster



By abardwell

We are conducting a study that might help you.

If so, I would like to invite you to take part in a study investigating your experiences of pregnancy, preparation for labour and birth and your experiences of the first 6 months of parenting your first child. This is an opportunity for you to have your say about something of real importance to you and to others who are becoming parents. Such research has the potential to benefit many parents throughout New Zealand. You may also find that being a part of this study is a valuable part of your own adjustment from couple-hood to parent-hood. And you may enjoy incorporating your responses to the questionnaires into your own records of your journey through pregnancy, labour, birth, and your first 6 months of parenthood.

All participation takes place in the privacy and comfort of your own home. To say thank you for your participation in this research project, you will be entered into 4 draws for products for babies and toddlers.

So if you are going to be a first time parent (please note that a previous miscarriage does NOT make you ineligible to participate) and Mum-to-be is less than 24 weeks pregnant, please check out the website or get in touch with me directly so we can discuss the possibility of you taking part in this project.

Ms Anne Howarth
Department of Psychological Medicine
Dunedin School of Medicine
Website: www.firsttimebirth.co.nz/
Phone: 03 474 7007 extn. 7387 (please leave a message)
Cellphone: 02 474 7007 or 02 2478 4464 (text me with your phone number)
Email: anne@firsttimebirth.co.nz



By Rang

This project has been approved by the Lower South Regional Ethics Committee.
Reference Number: LRS/10/11/052 Date: 17/03/2011

<p>Anne Howarth: First time parents Website: www.firsttimebirth.co.nz/ Phone: 03 4747007 extn 7387 Cell: 02 BIRTHING or 02 2478 4464 anne@firsttimebirth.co.nz</p>	<p>Anne Howarth: First time parents Website: www.firsttimebirth.co.nz/ Phone: 03 4747007 extn 7387 Cell: 02 BIRTHING or 02 2478 4464 anne@firsttimebirth.co.nz</p>	<p>Anne Howarth: First time parents Website: www.firsttimebirth.co.nz/ Phone: 03 4747007 extn 7387 Cell: 02 BIRTHING or 02 2478 4464 anne@firsttimebirth.co.nz</p>	<p>Anne Howarth: First time parents Website: www.firsttimebirth.co.nz/ Phone: 03 4747007 extn 7387 Cell: 02 BIRTHING or 02 2478 4464 anne@firsttimebirth.co.nz</p>	<p>Anne Howarth: First time parents Website: www.firsttimebirth.co.nz/ Phone: 03 4747007 extn 7387 Cell: 02 BIRTHING or 02 2478 4464 anne@firsttimebirth.co.nz</p>	<p>Anne Howarth: First time parents Website: www.firsttimebirth.co.nz/ Phone: 03 4747007 extn 7387 Cell: 02 BIRTHING or 02 2478 4464 anne@firsttimebirth.co.nz</p>
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Appendix D: Project flyer

To say thank you for your
participation you will be entered into

**FOUR DRAWS FOR
BABY & TODDLER
PRODUCTS**

**All participation takes place in the
privacy and comfort of your own
home.**



This research project has been reviewed and approved by the Lower
South Regional Ethics Committee.
Reference Number: LRS/10/11/052
Date: 17/03/2011

Expecting your first baby?

Are you feeling prepared for the birth?

My name is Anne Howarth. I am a PhD student
with the Department of Psychological Medicine,
Dunedin School of Medicine, University of
Otago.



By dragonaotearoa

Find out more and enrol online at:

www.firsttimebirth.co.nz

Or contact me:

Phone: 03 474 7007 ext. 7387
(please leave a message)

Cell: 02 BIRTHING or 02 2478 4464

Email: anne@firsttimebirth.co.nz



By Piadistefano. Self-made oil painting "Birth"

**We are conducting a study that
might help you.**



By abardwell

Have you and your partner recently found out you are expecting your first baby? If so, congratulations!

Would you like to take part in a research project looking at preparation for giving birth for the first time in New Zealand?

If so, I would like to invite you to take part in a study investigating your experiences of pregnancy, preparation for labour and birth, and your experiences of the first 6 months of parenting your first child.



By Nevit Dilmen

I am seeking English speaking first time parents living together in a relationship with both intending to parent this child. Marriage is not a requirement. Mothers need to be aged between 18 years and 42 years and less than 24 weeks pregnant at the time they are recruited for the study. Partners need to be 18 years and over (no upper age limitations for partners).



By Rangit

This is an opportunity for you to have your say about something of real importance to you and to others who are becoming parents. Such research has the potential to benefit many parents throughout New Zealand.

You may also find that being a part of this study is a valuable part of your own adjustment from couplehood to parent-hood.

And you may enjoy incorporating your responses to the questionnaires into your own records of your journey through pregnancy, labour, birth, and your first 6 months of parenthood.



By Daniel Schwen

So, if you are going to be a first time parent (please note that a previous miscarriage does NOT make you ineligible to participate) and Mum-to-be is less than 24 weeks pregnant, please check out the study website or get in touch with me so we can discuss the possibility of you taking part in this project.



By Kung Kritkamol

Appendix E: University of Otago press release – Pilot study

Study researches birth satisfaction for first time mothers

Friday 16 September 2011

A pilot University of Otago study investigating factors that contribute to birth satisfaction for first time New Zealand mothers has led to a bigger nationwide study examining how birth preparation impacts on birth satisfaction.

Anne Howarth, PhD researcher at the University of Otago's Department of Psychological Medicine, undertook a Master's degree qualitative study of birth satisfaction among a small sample of women who had just given birth. Four articles detailing the findings have recently been published or are currently in press in international journals: the *Journal of Health Psychology*; *Midwifery*; and the *New Zealand College of Midwifery Journal*.

She says that birth satisfaction is important because how a mother perceives the birth of her child influences her confidence in mothering abilities and consequently the early mother/child relationship. In turn this impacts on the child's sense of security as well as family psychosocial health. She found that the women, who came from the Dunedin area, wanted to feel safe, have good relationships with those caring for them, and to have responsibility for and control over their birth processes.

"This also meant they had a desire to take part in decision-making about medical interventions considered necessary," she says.

"These factors all contributed towards a woman experiencing birth satisfaction. In particular, vulnerable women appreciated the close relationships they established with their midwives."

She also found that those women needing an intervention to give birth, such as a forceps delivery, were very grateful that skilled obstetric help was available.

"However, a poor relationship between midwife and specialist could contribute towards distress experienced by the women, as did an obstetrician's lack of attention to bedside manner," she says.

"On the other hand, as one woman found, a few minutes taken by the obstetric team to introduce themselves and explain their roles resulted in her retaining a sense of personal control throughout the intervention. This resulted in an empowering and very satisfying birth experience for her, despite the necessity of an unexpected medical intervention".

"Despite professional differences in philosophy, women understood that everyone involved with their efforts to give birth – whether obstetricians or midwives – all wanted the best for the new baby and mum."

Ms Howarth is looking for 180 couples (expectant first time mothers aged from 18 to 42 and less than 24 weeks pregnant, and partners) to take part in a larger study called "Giving birth for the first time in New Zealand".

This study will investigate how birth preparation affects labour and birth, and subsequently birth and family satisfaction for both mothers and fathers for the first six months of parenting a first child.

The study is outlined on the website <http://firsttimebirth.co.nz>, or contact Anne directly by email: cocan807@student.otago.ac.nz, or by cellphone: 02 BIRTHING or 02 2478 4464.

Contact:

Anne Howarth
University of Otago
Department of Psychological Medicine
Tel: 03 4877570
Cellphone: 02 BIRTHING or 02 2478 4464
Email: cocan807@student.otago.ac.nz

Appendix F: Letters to the editor

Letter to the editor: ODT: Published August 17, 2011

I was interested to read your recent article *Midwife in time thanks to driver*. It was about a midwife getting to her pregnant lady through the snow. I'd like to commend the dedication of Prue Thomson and also comment that midwives as a profession can be relied upon to go the extra mile. This was demonstrated in a study of first-time birth experiences which I conducted in Dunedin during 2009. Through their clients' eyes, Dunedin midwives were shown to be highly skilled, safety conscious, aware of when to seek medical assistance, as well as being warm, caring and responsible Lead Maternity Carers (LMC). Midwives established strong and informative relationships with their clients which contributed towards their clients feeling secure enough to make informed choices about birth options available. Confidence was also boosted by the closeness of a well-staffed and resourced tertiary hospital.

Some women chose home birth and felt they were carefully and competently monitored by their midwives. Others chose to give birth in hospital under the care of their midwives. Both groups were confident their midwives would seek specialist help if required.

My research highlighted the importance of women having a good and trusting relationship with their LMC if they were to experience birth satisfaction. Research has revealed that feeling good about your birth experience can make the transition to being a parent easier. I say: keep up the good work to Prue Thomson and her profession in general.

I am now doing a study examining factors which contribute towards birth satisfaction for first-time New Zealand parents. I would like to invite any interested first-time pregnant couples who are less than 24 weeks pregnant to please contact me to discuss participating in this research.

Email: cocan807@student.otago.ac.nz, or text: 02 BIRTHING or 02 2478 4464

Letter to the Editor: North & South: Published October, 2011

Your striking magazine cover would have drawn many to read your article entitled *Midwives, bungled deliveries and the myth of "natural childbirth"* (August 2011). As researchers in the New Zealand childbirth area we were particularly interested in the opinions contained in the article and concerned for the anxiety it may have raised for pregnant women and their partners. Painting a different picture of midwives as Lead Maternity Carers (LMC) was an in-depth study of first-time birth experiences which we conducted in Dunedin during 2009. Through their clients' eyes midwives were shown to be highly skilled, safety conscious, aware of when to seek assistance, as well as being warm, caring and responsible LMCs. These midwives established strong and informative relationships with their clients which contributed towards clients feeling secure enough to make choices about birth options which satisfied their own requirements.

Those clients who elected to have home births felt they were carefully and competently monitored by their midwives. Women chose the homebirth option after exploring all issues with their midwives, and with the security of knowing a well-staffed and resourced tertiary hospital was close at hand if difficulties were encountered during labour. The other women in the study who chose to give birth in hospital did so under the care of their midwives. If difficulties developed during labour, which meant the midwife called in an obstetrician, there was little confusion as to who was in control of the situation once the midwife had handed over, despite the fact that there was some tension between some midwives and doctors. Both continued to work in a professional manner.

While we don't deny some midwives may struggle with issues related to their profession, it is not a helpful strategy to "tar all with the same brush". A more constructive approach would be to encourage couples to think about what they wanted from a LMC and then ask questions of any person they approach, be it GP, midwife or obstetrician, to satisfy themselves that this is a person who understands their needs, who is well skilled, and that this is a person with whom they feel they can relate. Our research strongly points towards birth satisfaction being reliant on women having a good and trusting relationship with their LMC. Birth satisfaction is important to make a successful transition to being a parent.

We are presently engaged in a second study examining factors which contribute towards birth satisfaction for first time New Zealand parents. We consider it to be very important that we do this research so that we have a sound understanding of the factors which will contribute towards giving our new generation the healthiest start in life possible. We would like to invite any first time pregnant women and their partners who are less than 24 weeks pregnant to contact Anne to discuss the possibility of participating in this research. Please contact by email: cocan807@student.otago.ac.nz or by text: 02 BIRTHING or 02 2478 4464.

Anne Howarth (PhD student) and Dr Swain (supervisor)

Appendix G: Example of paid ad

Calling Expectant Parents

Feeling prepared?

The current study taking place at University of Otago, (Department of Psychological Medicine) is a second study in a series. The first one examined what contributed towards a sense of birth satisfaction for new first time mothers (baby younger than 4 months).

Overseas research highlights the importance of birth satisfaction as it aids a woman's process of transition into being a Mum with a dependent baby to care for - major changes in lifestyle. While conducting this study it was realised that partners also undergo major lifestyle changes and on further research it was found that very few studies that even came close to examining this. Put into proper perspective it was realized that there was a huge gap in knowledge of the very beginnings of a family - because when a first baby is born to a couple, it is not only the mother and child adapting to each other, but a family is formed and all members go through adaptation processes. And so it was felt that it would be very important to give partners an opportunity to participate, tell us their needs and whether these are being adequately met. And if not - what they felt would have improved their experience.

Amongst other things, feeling well prepared for labour and birth, contributed towards a sense of birth satisfaction for women, and so the second study examines the impact of different types of birth preparation on birth self-efficacy, birth satisfaction and early family life satisfaction for both parents.

If you are interested in participating our receiving more information please refer to ad on left / right above below.

www.firsttimebirth.co.nz



Expecting your first baby?

Are you feeling prepared for the birth?

We are conducting a study that might help you.



Please check our website:
www.firsttimebirth.co.nz
or email anne@firsttimebirth.co.nz



The chill of winter...

...can already be felt so build up your cold and flu immunity now with lots of freshly squeezed juices! Call into our favourite café, Nadu, at 99 Nuffield Street, Newmarket and ask Nora for a 'Zinger' juice which she says, 'is really good for this time of the year being full of Vitamin C from the juice of oranges, pineapples, lemons and ginger.'

Want to be in control of your weight, your confidence, and your life? Then the Team at **Contours Glen Innes Women's Health Club** can help you!

Everything you want is here: Fun group fitness classes, great instructors, friends and heaps of motivation. We specialise in weight loss and support for women of all ages, with trainers that provide real, sustainable solutions for:

- Obesity
- Weight loss
- Toning
- Life long nutrition
- Strength training
- Increased self esteem
- Increase in stamina
- Stress relief
- Rehabilitation for injuries, illness and medical conditions

So you can become the best version of you.

09 528 8848

123B Apirana Avenue, Glen Innes, Auckland
www.gleninnes.contours.co.nz



women's health & fitness specialists



Appendix H: LMC letter with permission to contact form



LMC's name
Practice details

Date

Dear

I am a PhD student with the Department of Psychological Medicine, Dunedin School of Medicine. As part of the requirement for my PhD, I am undertaking a study of the birth experiences of first time parents and I am asking for your assistance. I appreciate that you are very busy so I will not ask very much of your time.

My study, *Giving birth for the first time in NZ*, aims to assess the effectiveness of a birth education programme in preparing parents for labour and birth. I am hoping you could assist me in the following ways.

As the LMC during pregnancy, I would ask you to:

- Hand out information about the study to your patients (flyer enclosed)
- Ask your patients for their permission for you to pass on their contact details to me (form enclosed)

In addition, as the LMC at birth I would ask you to:

- Be available for a telephone call at a time convenient for you after a patient's/participant's delivery:
 - Report your level of stress in providing care for this patient (1 [no stress] -10 [very high level of stress])
 - Report whether this stress was more or less than what you usually experience during a patient's labour and birth
- Each participant will be asked for permission for me to read your notes on her labour and delivery. If this is given I hope you will feel happy to pass this information on.

I will **NOT** ask you to change your treatment plan in any way.

This study has been approved by the Lower South Regional Ethics Committee (Reference Number: LRS/10/11/05; Date: 17/03/2011). The results of the study will be available to you.

I will follow up this letter with a phone call or email and would be very happy to meet with you to discuss this study and answer any questions you may have. If you wish, you can contact me at the following:

My contact details:

Ms Anne Howarth (BA, BSc, MSc)
Department of Psychological Medicine
University Telephone No: 03 4740999 ext 7387
Cell: 02 BIRTHING or 02 2478 4464
Email: cocan807@student.otago.ac.nz

Or

My supervisor's contact details:

Dr Nicola Swain
Department of Psychological Medicine
University Telephone No: 03 474 0999 ext 7299
Email: nicola.swain@otago.ac.nz

_____ give my permission for my Lead Maternity Carer
_____ to give my contact details listed below to the researcher Anne
Howarth, Department of Psychological Medicine, Dunedin School of Medicine, for the purpose of discussing with her the
possibility of my partner and me participating in the research project ***Giving birth for the first time in NZ***. By doing this we
are under no obligation to take part in the research project and if we do decide to participate and later change our minds
we can withdraw at any time.

Contact details:

Mobile: _____

Home phone: _____

Gestation: _____ weeks

Due Date: _____

Contact details will be stored securely for the duration of the research project. They will be destroyed at the conclusion of the project.

This project has been approved by the Lower South Regional Ethics Committee.

Reference Number: LRS/10/11/052

Date: 17/03/2011

Thank you.

Appendix I: Examples of letter or email asking for assistance

Anne Howarth
Department of Psychological Medicine
Dunedin School of Medicine
PO Box 913
Dunedin 9054
Telephone No: 03 4747007 ext 7387 (Please leave message)
Cell: 02 BIRTHING or 02 2478 4464
Website: www.firsttimebirth.co.nz
Email: anne@firsttimebirth.co.nz



June 19, 2012

Dear

I am a PhD student with the Department of Psychological Medicine, Dunedin School of Medicine. As part of the requirement for my PhD, I am undertaking a study of the birth experiences of first time parents and I am asking for your assistance to give information about the study to your clients expecting their first child. This can be done by directing them to the website www.firsttimebirth.co.nz or by handing out flyers (samples enclosed), or by making them available in your rooms. I can send you as many flyers as you feel you could use.

My study, *Giving birth for the first time in NZ*, aims to assess the effectiveness of a birth education programme in preparing parents for labour and birth. Please, when you have a moment, check out the website.

This study has been approved by the Lower South Regional Ethics Committee (Reference Number: LRS/10/11/05; Date: 17/03/2011) for local and national recruitment. The results of the study will be available to you.

I look forward to hearing from you.

Yours sincerely

Anne Howarth

To Whom It May Concern

I am conducting a research project about the types of birth preparation used by first time parents in New Zealand and their impact on birth satisfaction and early family life satisfaction. I would very much appreciate your assistance in placing the enclosed flyers/posters in your waiting rooms where your clients/patients will have access to them, or in handing them out to eligible clients. I am seeking couples living together (both intending to parent the child – marriage not a requirement) who are less than 24 weeks pregnant with their first child. Mothers must be aged between 18 and 42 years with partners aged 18 years plus.

If you have any questions please check out the study website or contact me directly (details above). If you would like more flyers please email me at the above address. The results of the study will be available to you.

Thank you for your time and attention.

Yours sincerely

Anne Howarth

Appendix J: Information sheet



Giving birth for the first time in NZ

Information Sheet for Parents

Who I am

My name is Anne Howarth. I am a PhD student with the Department of Psychological Medicine, Dunedin School of Medicine, University of Otago. I am looking for **180 couples** (mother-to-be and partner) to participate in this study.

An invitation to you to participate

As a first-time parent-to-be (hereafter referred to as parent), you are invited to take part in a study about giving birth in New Zealand for the first time. Thank you for showing an interest in this project. Please read this information sheet carefully and **discuss it with your partner** before you decide whether or not **you and your partner** will participate. If you both decide to participate, I thank you. If you decide not to take part, there will be no disadvantage to you of any kind, and I thank you for considering my request.

What is the aim of this project?

The purpose of this study is to investigate how parents (mother and partner) felt about their experiences of pregnancy, labour and giving birth, and their adjustment as a family for the first 6 months after your baby is born. This research project is being undertaken as part of the requirements for a PhD degree in Health Science.

What type of participants am I looking for?

I am seeking English speaking first time parents living together in a relationship with both intending to parent this child. Marriage is not a requirement. Mothers need to be aged between 18 years and 42 years and less than 24 weeks pregnant at the time they are recruited for the study. Partners need to be 18 years and over with no upper age limitations for the partners.

Can participants change their mind and withdraw from the project?

Please be aware that you may withdraw from participation in this project at any time without disadvantage to yourself of any kind. You can leave at any point during the study without explanation.

What will participants be asked to do?

Should you agree to take part in this project, in the privacy of your own home, you will be asked to complete 4 questionnaires. I will ask you to complete the first questionnaire between 22 and 24 weeks gestation. This will be the longest questionnaire and will take on average 15 minutes. I ask that you do not spend too much time on any question. If you spend a lot of time on any question it may take you longer.

After completion of the first questionnaire, participants will be randomly assigned to 1 of 3 groups, that is, selected for a group by chance, like the drawing of a raffle prize. As a result, after you have completed the first questionnaire you may be given a booklet to read. I will ask you and your partner to **both** read the sections of interest to each of you over the next 12 weeks. Or, after you have completed the first questionnaire you may be given a programme to work through at home. You will be given complete instructions about the parts of the programme I would like you to look at. You may do more if you are interested. I will ask that you and your partner work through this over the next 12 weeks. Finally, you may not be asked to do anything between questionnaires. I will also ask that all participants continue with their own chosen activities during pregnancy, for example, the antenatal classes you are planning to attend.

The second questionnaire will be sent for you to complete at 36 weeks gestation. This and the following questionnaires should take you on average 10 to 15 minutes to complete. Again, I ask that you do not spend too much time on any question. If you spend a lot of time on any question it may take you longer. The third questionnaire is for completion as soon after your baby's birth as you feel able. This questionnaire looks longer because it has spaces for you to make comments if you wish, but comments are NOT compulsory. I have found that after the baby's birth, people often have comments they wish to share. The final and shortest questionnaire will be sent to you 6 months after your baby's birth.

What data or information will be collected?

These questionnaires ask parents about their feelings and experiences during pregnancy and how they feel about childbirth and their family life in general.

All questionnaires will come with a self addressed and stamped envelope for you to return them in. You will also be asked if you are willing to give your permission for your midwife to provide information about any medical intervention which may be required during labour and birth.

Is your information confidential and will it be reported anonymously?

You will be given a study number and your name will not be stated on the questionnaires and it will never appear in any report on the study. Any potentially identifying information will also be removed so your participation is entirely anonymous. No material that could

personally identify you will be used in any reports on this study. Your information is confidential to the researchers (listed on page 3) involved in the project.

What do you do if you have questions or concerns after the study has started?

Should you need further questions about the study answered or should you become distressed during the duration of the study or should you simply want to talk about some aspect of the study, you will be **most welcome** to contact the researcher (Anne – see contact details on page 3) by phone, text or email (text or email with your phone number is best) to discuss any issues which have arisen. If you feel it will be helpful for you, you can choose to be referred to an appropriate agency which may be able to give you any assistance you may feel you require. Your well-being is very important to me.

Why am I doing this research?

Becoming a parent is a major change in lifestyle for **both** parents. I hope this study will help us to more clearly understand the needs of first time mothers **and** their partners, and the issues that are of real importance to them. I also hope such findings will subsequently be useful for increasing the understanding of all stakeholders in maternity care provision (policy makers, funders, doctors and midwives) so that the experience of having a first child is enhanced and parents feel supported and that their needs are met.

How do you benefit?

This is an opportunity for you to have your say about something of real importance to you and to others who are becoming parents. Such research has the potential to benefit many parents throughout New Zealand. You may also find that being a part of this study is a valuable part of your own adjustment from couple-hood to parenthood. And you may enjoy incorporating your responses to the questionnaires into your own records of your journey through pregnancy, labour, birth, and your first 6 months of parenthood. You are also most welcome to ask for a copy of the final results of the project should you wish. **You will also be entered into 4 draws to win products for small children as a thank you for taking part in this project.**

What use will be made of the data?

The results of this research project will be written up into a PhD thesis and will be available in the University of Otago Library (Dunedin, New Zealand). Material from the thesis will be independently written up for publication in scientific journals. As with the thesis, your responses to questions in the questionnaires will continue to be anonymous and your name will never appear in either the thesis or in any journal article.

The raw data (questionnaire responses) collected will be securely stored in such a way that only the researchers named below will be able to gain access to it. Any raw data on which the results of the project depend will be retained in secure storage for ten years, after which they will be destroyed.

Please feel free to contact the researchers if you have any questions about this study. **My contact details and those of another of the researchers involved in the project are:**

Ms Anne Howarth

Department of Psychological Medicine
University Telephone No: 03 4740999 ext 7387
Email: cocan807@student.otago.ac.nz
Cell: 02 BIRTHING or 02 2478 4464

Dr Nicola Swain

Department of Psychological Medicine
University Telephone No: 03 4740999 ext 7299
Email: nicola.swain@otago.ac.nz

Associate Professor Kate Scott

Department of Psychological Medicine
University Telephone No: 03 4740999 ext 7369
Email: kate.scott@otago.ac.nz

This project has been reviewed and approved by the Lower South Regional Ethics Committee.

Reference Number: LRS/10/11/052

Date: 17/03/2011

If you have any concerns or complaints about this study you can contact an independent health and disability advocate:

Free phone: 0800 555 050

Free fax: 0800 2 SUPPORT (0800 2787 7678)

Email: advocacy@hdc.org.nz

Appendix K: Example of consent form



Giving birth for the first time in NZ - Consent Form for Mothers

I have read and understand the Information Sheet dated 27 January, 2011 for volunteers taking part in a study designed to research birthing and family lifestyle issues. I have had the opportunity to discuss this study and all my questions have been answered to my satisfaction. I understand that I am free to request further information at any stage. I also know that:

- I have the opportunity to use whānau support or a friend to help me ask questions and understand the study.
- My participation in the project is entirely voluntary.
- I am free to withdraw from the project at any time without any personal disadvantage.
- Any information I give is confidential and will be used for the purpose of this research only and that no material that could identify me will be used in any reports on this study.
- I have had time to consider whether to take part in the study.
- I consent to my midwife providing information about any type of medical intervention I may need during labour and birth for the purpose of this research only.

Please circle: Yes No

My midwife is _____ Phone _____

- In the unlikely event that I may become distressed during the duration of this study, I can contact the researcher by telephone, text, or email to discuss any issues I may have and, if appropriate, I can be referred to a suitable help and support agency if I choose.
- Personal identifying information (names and contact details) will be destroyed at the conclusion of the project but any raw data on which the results of the project depend will be retained in secure storage for ten years, after which they will be destroyed.
- I can request a copy of the results.
- The results of the project may be published and will be available in the **University of Otago Library** (Dunedin, New Zealand). Every attempt will be made to preserve my anonymity.

I agree to take part in this project.

(Signature)

(Printed Name)

(Date)

This project has been approved by the Lower South Regional Ethics Committee.
Reference Number: LRS/10/11/052 Date: 17/03/2011

Appendix L: Example of demographic form

Demographics Information (Partners): Please tell us about yourself. Tick the appropriate box. This information is only for our statistics. It will be kept strictly confidential.

Marital status:	<input type="checkbox"/> Married <input type="checkbox"/> Living together but not married	
What age are you?	_____ years	
Do you own your home?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
What is your highest secondary school qualification?	<input type="checkbox"/> No secondary qualification <input type="checkbox"/> School Certificate or NCEA 1 <input type="checkbox"/> 6 th Form Certificate or UE or NCEA 2 <input type="checkbox"/> UE (7 th form) or Bursary or Scholarship or NCEA 3 <input type="checkbox"/> Overseas secondary school qualification <input type="checkbox"/> Don't know	
Do you have any other qualifications, such as a trade certificate, a diploma, or a degree, that you had to pass a course lasting at least 3 months of full time study, or part time equivalent, to get? Include only those qualifications you completed.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know	
Which of these qualifications do you have? Mark all that apply. Please specify other.	<input type="checkbox"/> NZ certificate or diploma (including trade or technician) <input type="checkbox"/> Nursing certificate or diploma <input type="checkbox"/> Polytechnic certificate or diploma <input type="checkbox"/> Teachers certificate or diploma <input type="checkbox"/> Bachelor's degree <input type="checkbox"/> Post graduate diploma or certificate <input type="checkbox"/> Master's degree <input type="checkbox"/> PhD degree <input type="checkbox"/> Other Qualification _____ _____ _____	
What is your occupation?	_____	
Are you currently:	<input type="checkbox"/> working full time (>37.5 hrs per week) <input type="checkbox"/> working part time (<20 hrs per week) <input type="checkbox"/> at home <input type="checkbox"/> a student	
What would the total income that you personally received from all sources before tax during the previous 12 months?	<input type="checkbox"/> No income <input type="checkbox"/> up to \$25,000 <input type="checkbox"/> \$25,001-\$50,000 <input type="checkbox"/> over \$50,001 <input type="checkbox"/> Don't know	

What would the total income (including your own) that <u>your household</u> received from all sources before tax during the previous 12 months?	<input type="checkbox"/> No income <input type="checkbox"/> up to \$25,000 <input type="checkbox"/> \$25,001-\$50,000 <input type="checkbox"/> over \$50,001 <input type="checkbox"/> Don't know	
Have you immigrated to New Zealand in the last 5 years?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
What ethnic group or group(s) do you belong to? Mark all that apply.	<input type="checkbox"/> New Zealand Maori Iwi: _____ Hapu: _____ <input type="checkbox"/> New Zealand European/Pakeha <input type="checkbox"/> Other European <input type="checkbox"/> English <input type="checkbox"/> Scottish <input type="checkbox"/> Irish <input type="checkbox"/> Indian <input type="checkbox"/> Chinese <input type="checkbox"/> South East Asian <input type="checkbox"/> Other Asian <input type="checkbox"/> Tongan <input type="checkbox"/> Niuean <input type="checkbox"/> Samoan <input type="checkbox"/> Tokelauan <input type="checkbox"/> Cook Island Maori <input type="checkbox"/> Other Pacific Island Group <input type="checkbox"/> Other: _____ <input type="checkbox"/> I choose not to answer this.	

Appendix M: Contact details



Giving birth for the first time in NZ

Contact details:

Mother's name: _____

Study number: MO _____

Mothers' mobile: _____

Mother's email: _____

Due Date: _____ Date recruited: _____ Gestation: ____ weeks

Partner's name: _____

Study number: PA _____

Partner's mobile: _____

Partner's email: _____

Home Address: _____

Home phone: _____

Third party we can contact if unable to locate you: _____

Third party's address: _____

Third party's telephone number: _____

Contact details will be stored securely for the duration of the research project. They will be destroyed at the conclusion of the project.

Thank you.

Appendix N: Help and social agencies



Giving birth for the first time in NZ.

Help and Social Agencies

The following agencies may be of assistance should you have an issue you need/want help with.

Emergency Psychological Services	479 0999
Arai Te Uru Whare Hauora Ltd	471 9960
Lifeline	0800 543 345
Parent Helpline – Barnados	0800 472 7368
Plunket Line	477 2255
La Leche League	467 5599
Family Planning Association	477 5850
Healthline	0800 611 116
Relationship Services	0800 735 283
Pregnancy Counselling Service	0800 773 462
Pregnancy Help Dunedin Inc	477 3337
Pacifica	473 8733
Psychotherapy and Counselling Centre	479 0996
Shields Counselling Services	473 6102
Cameron Centre	477 7117
Salvation Army Community Ministries	477 9852
Presbyterian Support Otago – Family Works	477 7115
Catholic Social Services	477 3403
Anglican Family Care Centre	477 0801
Methodist Connect	466 4600
Mosgiel Family Health Counselling Centre	489 3728
Relationship Services	477 6766
The Family Network Inc (special needs)	479 8064
GROW Community Mental Health	477 2871
Health and Disabilities Commissioner	0800 11 22 33

Post 6 months letter/email sent to participants with >9 score on the EPDS.

Dear Participants,

When a first child is born it is not unusual for people to feel a little anxious or upset about the responsibilities of parenthood and the changes they have experienced in lifestyle during their early years of parenthood. If you are experiencing feelings of anxiety, distress or depression we urge you to discuss these with your GP. Help and support is available. Also, there are other help agencies who work with and support families, such as:

Plunket (or other well child provider) - Otago Area Office	4740490
Arai Te Uru Whare Hauora Ltd	471 9960
Psychological Services - Call Dunedin Hospital and ask for	
Psychological Services	4740999
Depression Helpline	0800 111 757
Salvation Army Community Ministries	477 9852
Presbyterian Support Otago – Family Works	477 7115
Catholic Social Services	477 3403
Anglican Family Care Centre	477 0801
Methodist Connect	466 4600

If you live outside Dunedin please check your telephone directory for the phone numbers of these or similar agencies in your area.

Best wishes
Anne

10-10-17, V1

Appendix O: Online acknowledgement email

When both partners have enrolled

Hi

Firstly, congratulations to you both. Secondly, thank you for your interest in the first time birth study. It will be great to have you as participants.

I will keep track of your dates _____ and when you are 22 weeks I will send out the first questionnaires - one for you and one for _____, as well as a little welcome to the study gift. You can choose to do the questionnaires online or have paper copies sent to you. Either way works well for me so you choose what works better for you. Just let me know if you would prefer paper copies, otherwise I will send you the links to do the questionnaires online. Paper copies come with a self-addressed and stamped envelope to make it easy for you to return them.

On average it takes about 15 minutes to complete the questionnaire if you go through it quickly and go with your first response. After this questionnaire is completed a colleague of mine will assign you to one of the three groups in the study.

Your study number will be _____. I will always include this when I send you questionnaires so you do not have to worry about remembering that.

If you have any questions at any time during the course of the study, please do not hesitate to ask.

I send you both my very best wishes.

Anne

PS. Could you please hit the reply button and let me know how you first heard about this study. Thank you.

When only one partner has enrolled

Hi

Firstly, congratulations to you both. Secondly, thank you for your interest in the first time birth study and enrolling in the study. I hope _____ will like to take part too as our new dads have so much to contribute. I have included the link to the partners' enrolment form below. It will be great to have you as participants.

I will keep track of your dates and when you are 22 weeks I will send out the first questionnaires - one for you and hopefully one for _____ as well as a little welcome to the study gift. You can choose to do the questionnaires online or have paper copies sent to you. Either way works well for me so you choose what works better for you. Just let me know if you would prefer paper copies, otherwise I will send you the links to do the questionnaires online. Paper copies come with a self-addressed and stamped envelope to make it easy for you to return them.

On average it takes about 15 minutes to complete the questionnaire if you go through it quickly and go with your first response. After this questionnaire is completed a colleague of mine will assign you to one of the three groups in the study.

Your study number will be _____. I will always include this when I send you questionnaires so you do not have to worry about remembering that.

If you have any questions at any time during the course of the study, please do not hesitate to ask.

I send you both my very best wishes.

Anne

PS. Could you please hit the reply button and let me know how you first heard about this study. Thank you.

Partner's enrolment forms:

https://docs.google.com/spreadsheet/viewform?hl=en_US&formkey=dHZwS2Ryc1lkNE1BeIBHZjN3X0tETVE6MQ#gid=0

Appendix P: Intervention Group – research protocol

Intervention group

Dear Participants

Thank you for agreeing to take part in this research. You have been randomly assigned to group one. I am asking participants in this group to prepare for your birth by working through the enclosed birthing programme during your pregnancy. You may feel a little apprehensive at the size of the package you have received but please understand that while this is a comprehensive programme you do not have to use it all to develop skills that will assist you both to manage the labour and birth of your child. To save you time and give you a plan to follow there is a Programme Guideline included at the beginning of each booklet. The programme guideline in each booklet is the same but included at the front of *each* booklet for easy and quick reference.

It is recommended that you spend 10-15 minutes each day, or half an hour every two to three days, going through this material. People who have used the programme before have found that both of these approaches work well. It is up to you and your partner to decide what works best for you. The important thing is to begin at 24 weeks gestation and have worked through most of the learning material by 26 weeks. That gives you some time to practice what you have learned. As you will see from the programme guideline it is not a huge commitment of time. However, some of you may want to examine the programme in more detail. Please feel free to do this. As with anything in life, you get out of it relative to what you put into it.

This Birthing Programme Package includes:

1. A multimedia kit
 - a. Preparing Your Body – Essential Preparation Booklet (orange cover)
 - b. Preparing Your Body – Essential Preparation DVD
 - c. Preparatory Internal Work and Real Birth CD
 - d. Birth Journey CD
2. Managing Skills Booklet (yellow cover)
3. New Focus Booklet (blue cover)
4. Companion Guide Booklet (green cover)
5. Programme Guide (the 'Must Do' parts of the programme [included at the beginning of each booklet])

At 36 weeks gestation I will send you both the second questionnaire, one questionnaire for each of you, along with postage paid self-addressed return envelopes. If you prefer online, I will email the links to you.

Please contact me as soon after your baby is born as you feel able. I will then send you the third questionnaire. This questionnaire does not take very long to complete because I know you will be busy with your new baby.

When your baby is six months old I will send you the final questionnaire.

Please do not discuss what you are doing with any of your friends who are also expecting their first babies. They may be in the study too but doing something different. I do however recommend that you keep your midwife informed of what you are doing. Also please carry on with all the other activities you have planned for your pregnancy, for example, antenatal classes. This programme is not intended as a replacement for anything else you have planned.

At the conclusion of the study you will go into a draw for a number of gift packages to say thank you for the participation. If you wish to have a copy of the research results, please let me know.

If you have any questions about the study, or encounter any difficulties, or if you decide to move house please contact me as below. Email is my preferred method of contact:

Ms Anne Howarth

Department of Psychological Medicine
University Telephone No: 03 4740999 ext 7360
Email: cocan807@student.otago.ac.nz
Cell phone : 021 267 1066

Or if you have not been able to contact me, and you urgently wish to speak to someone, you could contact :

Dr Nicola Swain

Department of Psychological Medicine
University Telephone No: 03 474 0999 ext 7299
Email: nicola.swain@stonebow.otago.ac.nz

OR

Associate Professor Kate Scott

Department of Psychological Medicine
University Telephone No: 03 4740999 ext 7369
Email: kate.scott@otago.ac.nz

Best wishes

Anne, Kate, and Nic

Appendix Q: Active and Passive Control Groups – research protocols

Active Control Group

Dear Participants

Thank you for agreeing to take part in this research. You have been randomly assigned to group two. I am asking participants in this group to read the enclosed book of birth stories. We are asking you to read these stories because in previous research our participants have indicated that they would have liked to read about many different kinds of births – both easy and difficult. They felt that at antenatal classes any birth stories they heard were always about difficult births and that reading about easier births as well would have given them a better understanding of birth.

At 36 weeks gestation I will send you both the second questionnaire, one questionnaire for each of you, along with postage paid self-addressed return envelopes. If you prefer online, I will email the links to you.

Please contact me as soon after your baby is born as you feel able. I will then send you the third questionnaire. This questionnaire does not take very long to complete because I know you will be busy with your new baby.

When your baby is six months old I will send you the final questionnaire.

Please do not discuss what you are doing with any of your friends who are also expecting their first babies. They may be in the study too but doing something different. Also please carry on with all the other activities you have planned for your pregnancy, for example, antenatal classes. This activity is not intended as a replacement for anything else you have planned.

At the conclusion of the study you will go into a draw for a number of gift packages to say thank you for the participation. If you wish to have a copy of the research results, please let me know.

If you have any questions about the study, or encounter any difficulties, or if you decide to move house please contact me as below. Email is my preferred method of contact:

Passive Control Group

Dear Participants

Thank you for agreeing to take part in this research. You have been randomly assigned to group three. I am asking participants in this group to manage their pregnancies, labour and births as they have already planned. I am not asking you to do anything different. This group is very important for our understanding of how New Zealand couples currently approach pregnancy, labour and birth and I am very grateful for your participation.

At 36 weeks gestation I will send you both the second questionnaire, one questionnaire for each of you, along with postage paid self-addressed return envelopes. If you prefer online, I will email the links to you.

Please contact me as soon after your baby is born as you feel able. I will then send you the third questionnaire. This questionnaire does not take very long to complete because I know you will be busy with your new baby.

When your baby is six months old I will send you the final questionnaire.

Please do not discuss your participation in this study with any of your friends who are also expecting their first babies. They may be in the study too and some of their ideas may affect your own. I am interested in what you and your partner think and experience without influence from anyone else participating in the study. But please carry on talking with anyone else you had originally planned to ask questions of and get information from, for example, your midwife, family and other friends.

At the conclusion of the study you will go into a draw for a number of gift packages to say thank you for the participation. If you wish to have a copy of the research results, please let me know.

If you have any questions about the study, or encounter any difficulties, or if you decide to move house please contact me as below. Email is my preferred method of contact:

Ms Anne Howarth

Department of Psychological Medicine

University Telephone No: 03 4740999 ext 7360

Email: cocan807@student.otago.ac.nz

Cell phone : 021 267 1066

Or if you have not been able to contact me, and you urgently wish to speak to someone, you could contact :

Dr Nicola Swain

Department of Psychological Medicine

University Telephone No: 03 474 0999 ext 7299

Email: nicola.swain@stonebow.otago.ac.nz

OR

Associate Professor Kate Scott

Department of Psychological Medicine

University Telephone No: 03 4740999 ext 7369

Email: kate.scott@otago.ac.nz

Best wishes

Anne, Kate, and Nic

Appendix R: Record keeping

R1: Participant details

R2: Participant and midwife details

R3: In progress questionnaire record

R4: Questionnaire completion details

[illegible]

In Progress Questionnaire Record							
Questionnaire 1							
ID	Date sent paper	Date sent online	Gift sent/reminder sent/notes		Received mother	Received partner	Group assigned
Questionnaire 2							
ID	Date sent paper	Date sent online	Reminder sent/notes	Received mother	Received partner	Complete	
Questionnaire 3							
ID	Date sent paper	Date sent online	Reminder sent/notes	Received mother	Received partner	Complete	
Past Due Date							
ID	Due Date	Baby born	Birth check sent/gift sent/notes (including gender, name)	Q3 sent	Birth date in calendar	6 months noted in calendar	
Questionnaire 4							
ID	Date sent paper	Date sent online	Reminder sent/notes	Received mother	Received partner	Complete	

Questionnaire Completion Details

[illegible]

Appendix S: Examples of reminder letters

Anne Howarth
Department of Psychological Medicine
Dunedin School of Medicine
PO Box 913
Dunedin 9054
Telephone No: 03 4747007 ext 7387 (Please leave message)
Cell: 02 BIRTHING or 02 2478 4464
Website: www.firsttimebirth.co.nz
Email: anne@firsttimebirth.co.nz
Facebook: <http://www.facebook.com/FirstTimeBirths>



No response to a questionnaire

Dear _____

I hope this letter finds you and your family well.

I have not heard from you recently and I have not received the _____ questionnaire which I sent to you initially at the _____. It may be that you did not receive this questionnaire. It may also be that you have completed and submitted your responses online or posted your questionnaires but I have not yet received them.

Then again, it may also be that you are very busy and are struggling to find time for this particular questionnaire. We understand this which is why we state in our information sheet and on our website that you can withdraw at any time without explanation. The last thing we want to do is add to any stress you may be experiencing. If you feel you need to withdraw, we understand.

However, if you feel you are able to continue as a participant that is really great. I have enclosed the questionnaire, or I could send you a link to the online version if that would be more convenient. Could you please let me know what you plan.

Whatever your decision, we at the first time birth study wish you the very best.

OR Not yet completed questionnaire 2

Hi _____

I hope this letter finds you and _____ well. With your baby due on the 9th of next month this is just a little reminder that you have not completed the second questionnaire. However, it may be that you did not receive the link to this questionnaire. It may also be that you have completed and submitted your responses online but I have not yet received them.

Or you may have questions you would like me to answer. Maybe you are not sure about something. I do hope you feel you can ask me about anything you may be concerned or unsure about. I do want you to feel comfortable participating in this study. What you have to say about your experiences at this time is so important. Especially the needs of Fathers- they have been ignored for too long. Also I just wanted you to know that a missed questionnaire, if you just can't get to it, will NOT put you out of the study.

It may also be that your baby has come early. We have had a number of babies come before one or both parents have had a chance to complete the second questionnaire. In that situation we just drop the second questionnaire and these parents will go straight to the third.

However, if baby has not yet come and you feel you are able to continue I have included a paper copy of the second questionnaire for you. Many of our Dads are preferring paper versions. The second questionnaire is a shorter questionnaire than the first.

Wishing you the very best

OR Late to advise baby's birth

Hi _____

Just to let you know that I have been thinking of you. I hope Baby arrived without keeping you waiting too long and without too much fuss and bother. When you feel ready please let me know when baby was born and whether you had a boy or a girl. I have a wee gift for you when I know whether you had a boy or a girl.

Also I can send the third questionnaire out as paper copies if that would be helpful. Many of the new parents in the study are choosing this option as they can complete it a few minutes now and then a few later. They do not have to worry about Baby calling them from the computer.

Thank you for participating in this study. Your help is really appreciated.

Wishing you the very best.

OR Advice of baby's birth

Hi _____

What great news. Congratulations to you both and welcome to the world little _____.

I have a little gift I will get into the post to you. You will find a paper copy of the third questionnaire in the parcel. This questionnaire looks big but I have left a lot of room for comments. However comments are NOT compulsory. It is an option for those who have something they feel they want to share.

Many parents are finding paper copies much easier at this time as they can do them a few minutes at a time over a number of weeks - just as they feel able. But make sure you take care of yourself and give yourself chance to recover from the birth before you tackle questionnaires - just when you are ready.

Wishing you and your new family so much happiness.

OR Reminder for questionnaire 3

Hi _____

Just checking in with you to see how you are doing with the third questionnaire. It is such a busy time for you it can be difficult to get to something extra like a questionnaire. Or you may have questions you would like me to answer. Maybe you are not sure about something. I do hope you feel you can ask me about anything you may be concerned or unsure about. I do want you to feel comfortable participating in this study. What you have to say about your experiences at this time is so important. Especially the needs of Fathers- they have been ignored for too long.

It may be that you have already completed the paper copies of the questionnaire and in the post. It may also be that it is now more convenient for you to have an online version of questionnaire 3 so you do not have the hassle of finding a post office to post back completed questionnaires. Would online be helpful for you? Just in case online is now better for you, I have included the links below.

Also I just wanted you to know that a missed questionnaire, if you just can't get to it, will NOT put you out of the study.

Best wishes

Mother's questionnaire 3 – Study number MO

https://docs.google.com/spreadsheet/viewform?hl=en_US&formkey=dHUxa1RhYUE5MTcxdUVvQXNZTnBQTFE6MQ#gid=0

Partner's questionnaire 3 – Study number PA

https://docs.google.com/spreadsheet/viewform?hl=en_US&formkey=dGJSY01PUkotR2ZVazdkMmxldjVSWEE6MQ#gid=0

OR Rather paper copies?

Some of the parents in the study have asked for paper copies of questionnaire 3 so they can do it a minute here and a minute there. It can be so hard to find 15-20 minutes to sit and do a questionnaire online with a new baby. Would that be helpful for you? If so please let me know and I will post out the questionnaires. Just in case online is still OK for you though, I have included the links again.

Mother's questionnaire 3 – Study number

https://docs.google.com/spreadsheet/viewform?hl=en_US&formkey=dHUxa1RhYUE5MTcxdUVvQXNZTnBQTFE6MQ#gid=0

Partner's questionnaire 3 – Study number

https://docs.google.com/spreadsheet/viewform?hl=en_US&formkey=dGJSY01PUkotR2ZVazdkMmxldjVSWEE6MQ#gid=0

Thank you for participating in this study. Your help is really appreciated.

Wishing you the very best.

OR Rather online questionnaires?

Some of the parents in the study have asked for the opportunity to do questionnaire 3 online so they do not have to find a post office to post back completed questionnaires. Would that be helpful for you? Just in case online is better for you, I have included the links below.

Mother's questionnaire 3 – Study number

https://docs.google.com/spreadsheet/viewform?hl=en_US&formkey=dHUxa1RhYUE5MTcxdUVvQXNZTnBQTFE6MQ#gid=0

Partner's questionnaire 3 – Study number

https://docs.google.com/spreadsheet/viewform?hl=en_US&formkey=dGJSY01PUkotR2ZVazdkMmxldjVSWEE6MQ#gid=0

Thank you for participating in this study. Your help is really appreciated.

Wishing you the very best.

Appendix T: Debrief for participants



Giving birth for the first time in NZ. Debriefing sheet

You are receiving this email with the results of the first time birth study because you answered one or more questionnaires from the study. Firstly, my apologies for how long this has taken to come to you. It took over 2 years to recruit for the study and then I had a bit of an accident which meant a year off. However here I am now.

The primary purpose of this study was to examine the effectiveness of a skills-based approach to labour and birth using the self-teach programme, *The Pink Kit Method for Birthing Better*®, for couples expecting a first child. This programme claims to encourage the development of labour and birth skills by providing information enabling women to develop labour and birth skills, and fathers to develop labour and birth coaching skills suited to their own needs so that they become part of what the developer refers to as a *skilled birthing population*. The programme was chosen because it addresses the three major themes identified as contributing towards birth satisfaction in the pilot study *First time birth experiences within the New Zealand midwifery driven maternity system*. These were *taking personal responsibility, relationship issues and safety net*. The *The Pink Kit Method for Birthing Better*® programme claims to provide information which allows women to make choices and give informed consent but it also claims to take this one step further by providing the information necessary to become skilled. It also focuses on relationship issues and encourages the development of close and supportive teamwork through developing awareness of others along with good communication skills. The programme is also safety conscious recognising that birth does not always go to plan (the developer recognises that many, many women will not birth easily) and offering the programme as an adjunct to working alongside the medical professionals whenever the situation demands such care, even for caesarean sections.

The developer, Dr Virginia Lubell, qualified as a medical anthropologist and the information she has put together has resulted from over 15 years working with pregnant women and their partners as they gave birth to their babies, predominantly in the United States but also in third world countries. With her permission I removed all identifying information from the material sent out to Group 1 as I wanted participants to be unaware of and uninfluenced by the material on the internet. The programme is produced and marketed by a local New Zealand charity, Common Knowledge Trust.

Although the programme is available to purchase online it is still in stages of development as the Common Knowledge Trust seeks funding to improve presentation. Several of you commented on the presentation. The video was the result of a notice put up on a Nelson church hall inviting pregnant couples to come in and help make the video – very much a shoestring budget. A number of you sent very valuable feedback on the programme which I have sent on to the developer. She was grateful because there were points that she thought she had made but which were obviously not clear. She has been working to address all of the issues you have indicated.

The first time birth study aimed to determine whether the skills-based approach advocated in this programme would result in higher childbirth self-efficacy for the mother and higher childbirth coaching self-efficacy for the partner. The study also aimed to determine whether those who used a skills-based approach experienced less pregnancy anxiety, higher birth satisfaction, and higher parenting self-efficacy, higher family life satisfaction, and lower rates of postpartum depression at six months, compared to those parents who had used a more traditional approach based on information about labour and birth and the birth plans they developed with their LMCs. The study also sought to determine relationships between factors for birth satisfaction, and parenting self-efficacy, family life satisfaction, and postpartum depression at six months and to use qualitative data to give greater depth of understanding to the childbirth experience for both parents.

The study also aimed to determine whether the midwife, as an independent practitioner, benefited when clients demonstrated greater childbirth/coaching self-efficacy and more willingness to take greater responsibility for their own birthing processes. The study examined the midwife's stress levels when working with clients in the study and the comparison between the stress experienced with clients in the study and the stress experienced when working with clients in general.

Key results summarised

Analysis revealed significant differences between groups for childbirth self-efficacy for mothers at 36 weeks gestation. Mothers in Group 1 (issued the birth skills programme) showed greater confidence in their ability to manage labour and birth at 36 weeks gestation than those in both Groups 2 and 3. There were no significant differences between groups for fathers for childbirth self-efficacy at 36 weeks gestation. However, this may be explained by the finding that fathers engaged with the programme significantly less than the mothers did. Results did suggest a potential trend for fathers in Group 1 to show a slightly greater increase in childbirth coaching self-efficacy compared to Groups 2 and 3. The results for pregnancy anxiety did not reveal significant differences between groups for either parent at 36 weeks gestation.

Analysis revealed significant differences between groups for birth satisfaction for mothers. Mothers in Group 1 experienced greater birth satisfaction than Group 3 but were not different from Group 2. A similar result was revealed for fathers. Group 2 were issued with a collection of birth stories. These stories provided role models which may have had some influence here.

Analysis revealed no significant differences between groups for parenting self-efficacy or postpartum depression at six months for either the mother or the father. While there were no significant differences between groups for family life satisfaction for fathers, there was for mothers. Mothers in Group 1 showed a greater total decrease in family life satisfaction compared to Groups 2 and 3. This is a surprising finding which requires further investigation.

Analysis revealed a number of relationships between factors for birth satisfaction, and parenting self-efficacy, family life satisfaction and postpartum depression at six months. Induction, caesarean delivery, and meeting of birth expectations were associated with birth

satisfaction for mothers. Family life satisfaction at 24 weeks gestation, induction, caesarean, meeting of birth expectations, and the usefulness of antenatal classes were associated with birth satisfaction for fathers.

Mothers' parenting self-efficacy at six months was associated with parenting self-efficacy immediately post birth, medical intervention, and the use of touch during labour as a non-medication pain relief strategy, family life satisfaction at six months and postpartum depression at six months post birth. For fathers, parenting self-efficacy immediately post birth, the distress he expected the mother to experience during labour and birth, meeting of labour expectations, and family life satisfaction at six months were associated with parenting self-efficacy at six months.

Mothers' family life satisfaction at six months was associated with family life satisfaction, childbirth self-efficacy, pregnancy anxiety, and depression at 24 weeks gestation, labour pain intensity, helpfulness of non-medicated pain relief strategies, parenting self-efficacy at six months and postpartum depression at six months as well as Group. For fathers, family life satisfaction and pregnancy anxiety at 24 weeks gestation, witnessing labour pain, medical intervention, parenting self-efficacy at six months and postpartum depression at six months were associated with family life satisfaction at six months.

Mothers' postpartum depression at 6 months was associated with trait anxiety, family life satisfaction, and depression at 24 weeks gestation, other intervention (difficulties which occurred post birth requiring medical treatment) parenting self-efficacy at six months, and family life satisfaction at six months post birth. For fathers, family life satisfaction, pregnancy anxiety, and depression at 24 weeks gestation, labour length expectation, helpfulness of non-medicated pain relief strategies, other intervention, and family life satisfaction at six months were associated with postpartum depression at six months.

The following themes emerged from the analysis of the comments parents made on questionnaire 3. These added depth of understanding to the quantitative analysis of the experience of childbirth for both mother and partner.

For mothers three major themes emerged from the data. These were owning the process; support and supporters, care and carers; and safe delivery.

1. Owning the process was composed of the subthemes seeking information; making choices which was comprised of choosing supporters, choosing LMCs, choosing the environment for birth, and choosing effective pain management strategies; making a birth plan, and expectations.
2. Support and supporters, and care and carers comprised the subthemes relationships – known and trusted; attitudes of supporters and carers; communication; feeling informed; and continuity of care.
3. Safe delivery (and feeling safe), was composed of the subthemes professionalism comprising midwife professionalism and medical staff (obstetricians, anaesthetists, registrars, hospital midwives and nurses, and any other staff forming part of the care team) professionalism; control of self during labour and birth; control of decision making; interventions; hospital facilities comprising medical resources and accommodation resources; and healthy baby/healthy mum incorporating held baby right away, skin on skin, and breastfeeding.

For fathers four major themes emerged from the data. These were safety of mother and baby; included and involved; mother coped; and the birth and after.

1. Safety of other and baby was composed of staff professionalism ensuring high standard of care for mother and baby; and environment – home or hospital.
2. Included and involved comprised the subthemes support role understood; team work with mother; professionals facilitated this teamwork; and partner was confident he made a difference.
3. Mother coped was composed of the subthemes partner perceived mother to be in control of birth process; partner perceived that mother managed the pain; and partner found it difficult seeing mother in pain.
4. The birth and after was comprised of the subthemes labour and birth progressing well and without complications; complications and interventions; keeping parents informed; healthy baby/healthy mother; seeing and holding baby for first time; and disrupting bonding – inadequacy of hospital resources.

Midwife study

After correcting for the effects of complications, analysis determined there was a significant difference between groups for midwives for comparative stress levels (the stress experienced working with a client in this study compared to the stress generally experienced when working with clients in their practices). Stress levels were lower for midwives working with participants in Group 1 compared to Groups 2 and 3.

I most humbly thank all of you amazing new parents who made the time for and committed yourselves to taking part in this study. You so generously shared your journey with me. It is now my job to try to get this information to where it can do the most good for future new parents.

If you have any questions, please email me at anne@firsttimebirth.co.nz.

Yours sincerely

Anne Howarth
Behavioural sciences
Department of Psychological Medicine
Dunedin School of Medicine
University of Otago

Appendix U: Questionnaires

U1: Letters accompanying questionnaires

U2: Example of questionnaire one

U3: Example of questionnaire two

U4: Example of questionnaire three

U5: Example of questionnaire four



Ms Anne Howarth

Department of Psychological Medicine

Dunedin School of Medicine

PO Box 913

Dunedin 9054

Telephone No: 03 4747007 ext 7387 (Please leave message)

Cell: 02 BIRTHING or 02 2478 4464

Website: www.firsttimebirth.co.nz

Email: anne@firsttimebirth.co.nz

Dear _____

Questionnaire 1

Please find enclosed (the links to) the first set of questionnaires – one for you and one for your partner. Please do not discuss the questions before you complete them. It is important that you both answer without influence from each other.

Could you please complete the questionnaires before you are 24 weeks pregnant and return them in the self-addressed and stamped envelope. If you go through the questionnaires quickly and go with your first response, the questionnaires will take on average 15 minutes to complete.

Again thank you very much for taking part in this research project. The information that you and your partner provide is very important.

Questionnaire 2

Please find enclosed (the links to) the second set of questionnaires – one for you and one for your partner. Please do not discuss the questions before you complete them. It is important that you both answer without influence from each other.

Could you please complete the questionnaires during the week you are 36 weeks pregnant and return them in the self-addressed and stamped envelope as soon as is convenient. If you go through the questionnaires quickly and go with your first response, the questionnaires will take on average 15 minutes to complete.

I would like to wish you well for your labour and birth. Could one of you please contact me as soon after your baby is born as you feel able.

Again thank you very much for taking part in this research project. The information that you provide is very important.

Questionnaire 3

Congratulations on the birth of your baby. I wish you and your new family so much happiness. Enclosed is a gift for your baby which I hope will be useful for you.

Please find enclosed (the links to) the third set of questionnaires – one for you and one for your partner. Please do not discuss the questions before you complete them. It is important that you both answer without influence from each other.

Could you please complete the questionnaires as soon as you are able (just when you can and before Baby is 2 months please) and return them in the self-addressed and stamped envelope. If you go through the questionnaires quickly and go with your first response, the questionnaires will take on average 15 minutes to complete. However, as many people feel they have something to say after the birth of their baby I have left space for you to make comments if you want to do that. If you feel you have a lot you want to say you are welcome to write on the back of the questionnaires as well. However, comments are **NOT** compulsory.

Again thank you very much for taking part in this research project. The information that you and your partner provide is very important.

Questionnaire 4

Please find enclosed (the links to) the final set of questionnaires – one for you and one for your partner. Please do not discuss the questions before you complete them. It is important that you both answer without influence from each other.

Could you please complete the questionnaires as soon as possible and return them in the self-addressed and stamped envelope. If you go through the questionnaires quickly and go with your first response, the questionnaires will take on average less than 15 minutes to complete. If you have any other final comments you want to make please use the back of the questionnaire papers.

Again thank you very much for taking part in this research project. The information that you and your partner have provided is very important. I shall send you the results of the study once all data is in and analysed. I will also advise you of the results of the draws for baby and toddler gear. I wish you and your family every happiness now and for the future.

Yours sincerely

Anne Howarth

Please read all instructions carefully and answer every question as best you can. Please be open and honest in your responding. There are no right or wrong answers. Tick only one circle per statement or question. Please do not spend too much time on any one statement or question. You are asked to complete the questionnaires without consulting with your partner. I am interested in your ideas and answers and your partner's ideas and answers separately. Any information you give is confidential and all results are anonymous.

Both: Section 1: State Trait Anxiety Inventory

Spielberger, C. D., Gorsuch, R. L., Lushene, R., Vagg, P. R., & Jacobs, G. A. (1983). *Manual for the State Trait Anxiety Inventory, Form Y, "Self-evaluation Questionnaire."* Palo Alto, CA: Consulting Psychologist Press.

A number of statements that people have used to describe themselves are given below. Read each statement and then tick the appropriate circle to indicate how you generally feel, <u>separate</u> from (being/known your partner is) pregnant.	Almost never	Some times	Often	Almost always
1.1. I feel pleasant.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1.2. I feel nervous and restless.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1.3. I am satisfied with myself.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1.4. I wish I could be as happy as others seem to be.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1.5. I feel like a failure.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1.6. I feel rested.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1.7. I am 'cool, calm, and collected'.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1.8. I feel that difficulties are piling up so that I cannot overcome them.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1.9. I worry too much over something that doesn't really matter.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1.10. I am happy.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1.11. I have disturbing thoughts.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1.12. I lack self-confidence.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1.13. I feel secure.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1.14. I make decisions easily.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1.15. I feel inadequate.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1.16. I am content.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1.17. Some unimportant thought runs through my mind and bothers me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1.18. I take disappointments so keenly that I can't put them out of my mind.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1.19. I am a steady person.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1.20. I get in a state of tension or turmoil as I think over my recent concerns and interests.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Mother's - Section 2: Pregnancy-Related Anxiety Scale

Rinni, C., Dunkel-Schetter, C., Wadhwa, P., & Sandman, C. (1999). Psychological adaptation and birth outcomes: the role of personal resources, stress and socio cultural context in pregnancy. *Health Psychology, 18*, 333-345.

<i>Below are 10 statements about how people feel about pregnancy and their baby. Please read the questions and tick the appropriate circle that best represents how you feel.</i>	Never	Seldom	Sometimes	A lot of the time
2.1. I am confident of having a normal childbirth.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2.2. I think my labour and delivery will go normally.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2.3. I have a lot of fear regarding the health of my baby.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2.4. I am worried that the baby could be abnormal.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2.5. I am afraid that I will be harmed during delivery.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2.6. I am concerned (worried) about how the baby is growing and developing inside me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2.7. I am concerned (worried) about losing the baby.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2.8. I am concerned (worried) about having a hard or difficult labour and delivery.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2.9. I am concerned (worried) about taking care of a new baby.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2.10. I am concerned (worried) about developing medical problems during my pregnancy.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Father's Adaptation Section 2:

<i>Below are 10 statements about how people feel about their partner's pregnancy and their baby. Please read the questions and tick the appropriate circle that best represents how you feel.</i>	Never	Seldom	Sometimes	A lot of the time
2.1. I am confident of my partner having a normal childbirth.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.2. I think her labour and delivery will go normally.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.3. I have a lot of fear regarding the health of my baby.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.4. I am worried that the baby could be abnormal.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.5. I am afraid that my partner will be harmed during delivery.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.6. I am concerned (worried) about how the baby is growing and developing inside my partner.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.7. I am concerned (worried) about her losing the baby.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.8. I am concerned (worried) about her having a hard or difficult labour and delivery.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.9. I am concerned (worried) about my role in taking care of a new baby.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.10. I am concerned (worried) about my partner developing medical problems during her pregnancy.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Both - Section 3: Edinburgh Postnatal Depression Scale (10 items)

Cox, J.L., Holden, J.M., and Sagovsky, R. 1987. Detection of postnatal depression: Development of the 10-item Edinburgh Postnatal Depression Scale. *British Journal of Psychiatry* 150:782-786.

As you are (your partner is) expecting a (your) baby, we would like to know how you are feeling. Please tick the circle beside the answer that comes closest to how you have felt IN THE PAST 7 DAYS, not just how you feel today.

- 3.1. I have been able to laugh and see the funny side of things.
 - ☐ As much as I always could
 - ☐ Not quite so much now
 - ☐ Definitely not so much now
 - ☐ Not at all
- 3.2. I have looked forward with enjoyment to things.
 - ☐ As much as I ever did
 - ☐ Rather less than I used to
 - ☐ Definitely less than I used to
 - ☐ Hardly at all
- 3.3. I have blamed myself unnecessarily when things went wrong.
 - ☐ Yes, most of the time
 - ☐ Yes, some of the time
 - ☐ Not very often
 - ☐ No, never
- 3.4. I have been anxious or worried for no good reason.
 - ☐ No, not at all
 - ☐ Hardly ever
 - ☐ Yes, sometimes
 - ☐ Yes, very often
- 3.5. I have felt scared or panicky for no very good reason.
 - ☐ Yes, quite a lot
 - ☐ Yes, sometimes
 - ☐ No, not much
 - ☐ No, not at all
- 3.6. Things have been getting on top of me.
 - ☐ Yes, most of the time I haven't been able to cope at all
 - ☐ Yes, sometimes I haven't been coping as well as usual
 - ☐ No, most of the time I have coped quite well
 - ☐ No I have been coping as well as ever
- 3.7. I have been so unhappy that I have had difficulty sleeping.
 - ☐ Yes, most of the time
 - ☐ Yes, sometimes
 - ☐ Not very often
 - ☐ No, not at all
- 3.8. I have felt sad or miserable.
 - ☐ Yes, most of the time
 - ☐ Yes, quite often
 - ☐ Not very often
 - ☐ No, not at all
- 3.9. I have been so unhappy that I have been crying.
 - ☐ Yes, most of the time
 - ☐ Yes, quite often
 - ☐ Only occasionally
 - ☐ No, never
- 3.10. The thought of harming myself has occurred to me.
 - ☐ Yes, quite often
 - ☐ Sometimes
 - ☐ Hardly ever
 - ☐ Never

Mother's - Section 4: Birth Event Expectations

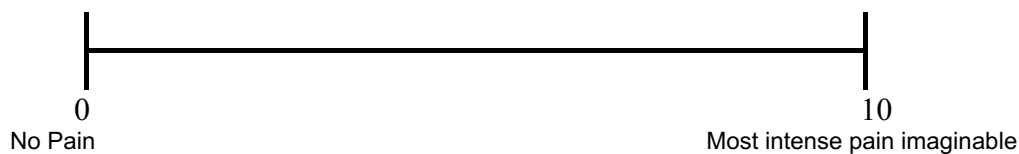
Please think about your expectations for your labour and birth. Please use the following scale to rate how likely you feel you will experience each of the following by putting a stroke through the line.

For example: If you are predicting the weather and you expect it will not rain before nightfall, you may put a stroke through the line like below. This would say that you felt there was only a small chance of rain before nightfall.

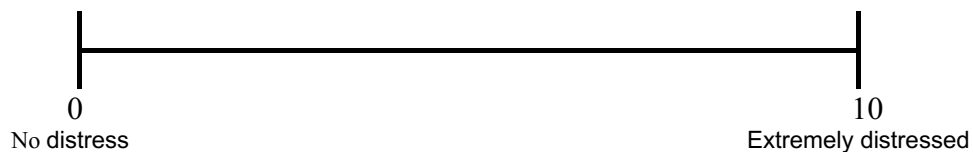


What are your expectations for the following?

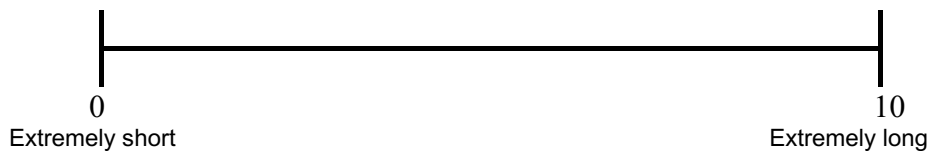
4.1. Labour Pain



4.2. Labour Pain Distress. (By distress I mean how much you expect to feel upset by the pain or how much you expect that you will not be able to cope with the pain)

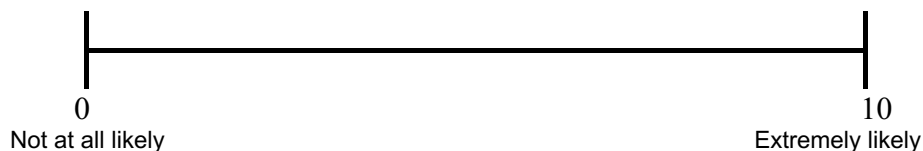


4.3. Length of labour

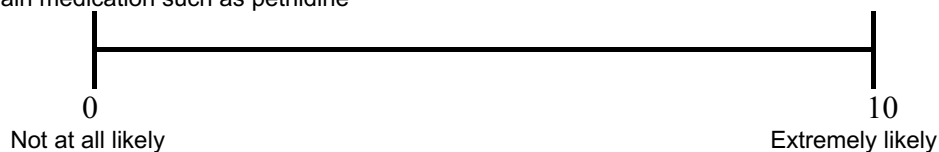


How likely do you expect to want any of the following?

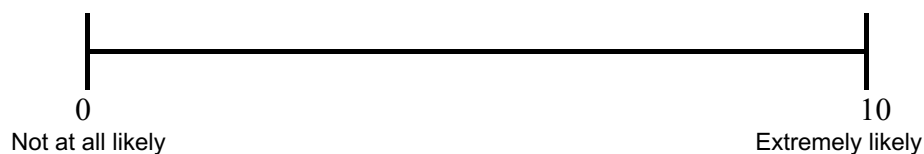
4.4. Epidural



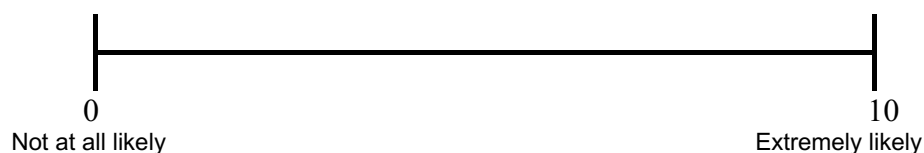
4.5. Pain medication such as pethidine



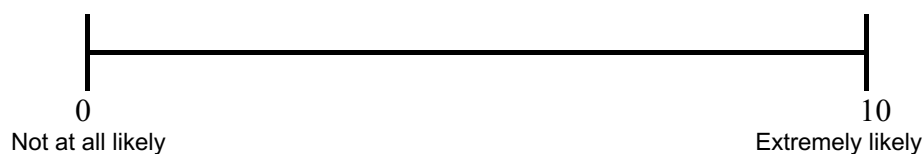
4.6. Oxygen (gas)



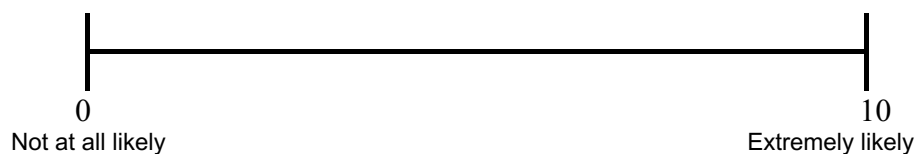
4.7. No medication at all. I will use other pain management techniques.

***How likely do you expect you will experience the following?***

4.8. Caesarean Section



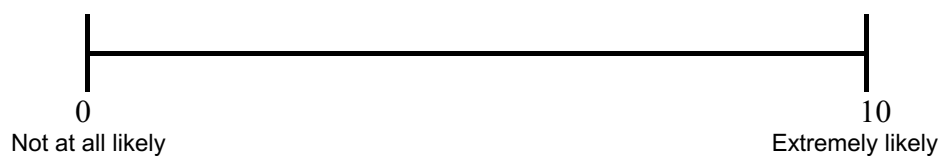
4.9. Assisted vaginal delivery (forceps or ventouse)



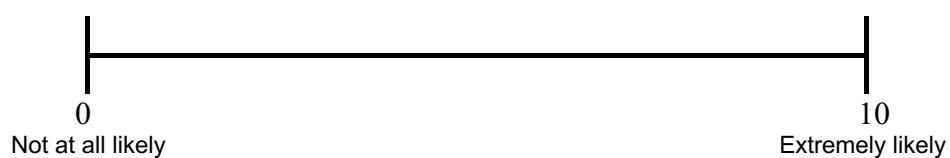
4.10. Episiotomy



4.11. Induction (given medication to start your labour)



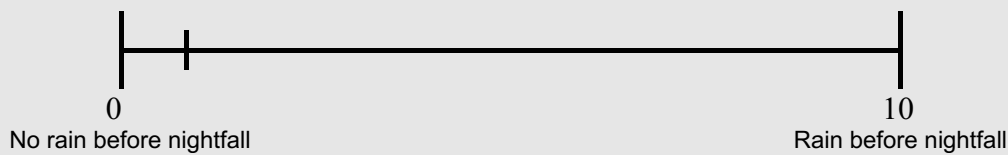
4.12. No intervention at all (natural birth).



Father's Adaptation Section 4:

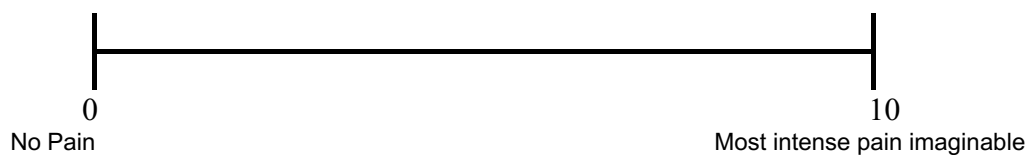
Please think about your expectations for your partner's labour and birth. Please use the following scale to rate how likely you feel she will experience each of the following by putting a stroke through the line.

For example: If you are predicting the weather and you expect it will not rain before nightfall, you may put a stroke through the line like below. This would say that you felt there was only a small chance of rain before nightfall.

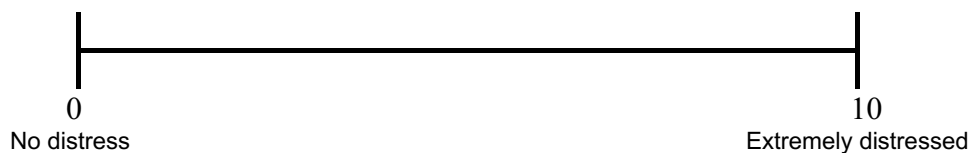


What are your expectations for your partner for the following?

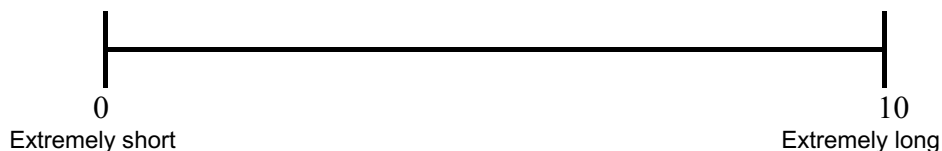
4.1. Labour Pain



4.2. Labour Pain Distress. (By distress I mean how much you expect her to feel upset by the pain or how much you expect that she will not be able to cope with the pain)

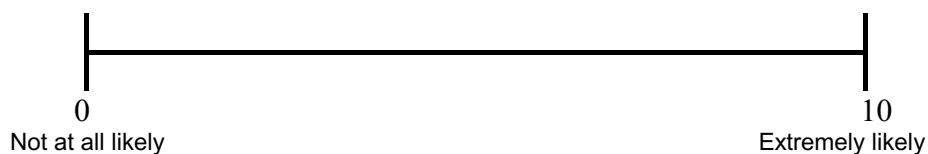


4.3. Length of labour



How likely do you expect she will want any of the following?

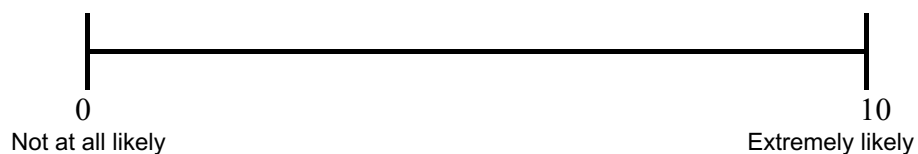
4.4. Epidural



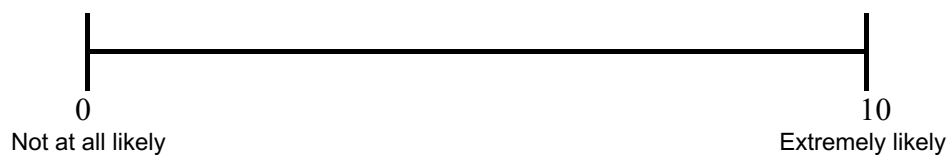
4.5. Pain medication such as pethidine



4.6. Gas (Nitrous oxide)



4.7. No medication at all. She will use other pain management techniques.

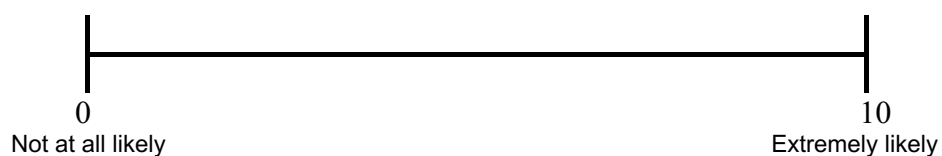


How likely do you expect she will experience the following?

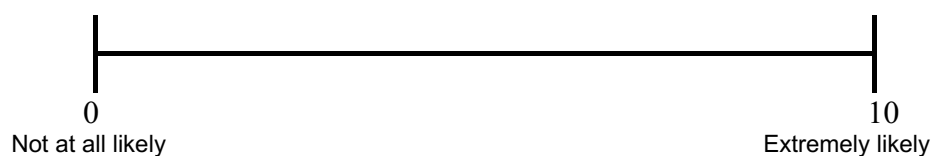
4.8. Caesarean Section



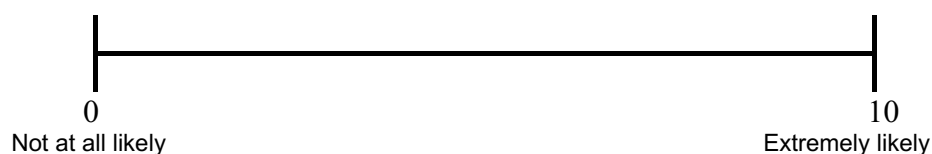
4.9. Assisted vaginal delivery (forceps or ventouse)



4.10. Episiotomy (a surgical cut to the perineum to prevent tearing as the baby is born)



4.11. Induction (given medication to start her labour)



4.12. No intervention at all (natural birth).



Mother's - Section 5: Childbirth Self-Efficacy Inventory (Scale) (CBSEI)

Lowe, N. (1993). Maternal confidence for labor: Development of the childbirth self-efficacy inventory. *Research in Nursing & Health*, 16, 141-149.

Part 1: Think about how you imagine labor will be and feel when you are having contractions 5 minutes apart or less. For each behavior, indicate how certain you are of your ability to use the behavior to help you cope with this part of labor by circling a number between 1, not at all sure, and 10, completely sure.

	Not at all sure									Com- pletely sure
5.1. Relax my body.	1	2	3	4	5	6	7	8	9	10
5.2. Get ready for each contraction.	1	2	3	4	5	6	7	8	9	10
5.3. Use breathing during labour contractions.	1	2	3	4	5	6	7	8	9	10
5.4. Keep myself in control.	1	2	3	4	5	6	7	8	9	10
5.5. Think about relaxing.	1	2	3	4	5	6	7	8	9	10
5.6. Concentrate on an object in the room to distract myself.	1	2	3	4	5	6	7	8	9	10
5.7. Keep myself calm.	1	2	3	4	5	6	7	8	9	10
5.8. Concentrate on thinking about the baby.	1	2	3	4	5	6	7	8	9	10
5.9. Stay on top of each contraction.	1	2	3	4	5	6	7	8	9	10
5.10. Think positively.	1	2	3	4	5	6	7	8	9	10
5.11. Not think about the pain.	1	2	3	4	5	6	7	8	9	10
5.12. Tell myself that I can do it.	1	2	3	4	5	6	7	8	9	10
5.13. Think about others in my family.	1	2	3	4	5	6	7	8	9	10
5.14. Concentrate on getting through one contraction at a time.	1	2	3	4	5	6	7	8	9	10
5.15. Listen to encouragement from the person helping me.	1	2	3	4	5	6	7	8	9	10

Part 2: Think about how you imagine labor will be and feel when you are pushing your baby out to give birth. For each behavior, indicate how certain you are of your ability to use the behavior to help you cope with this part of labor by circling a number between 1, not at all sure, and 10, completely sure.

	Not at all sure									Com- pletely sure
5.16. Relax my body.	1	2	3	4	5	6	7	8	9	10
5.17. Get ready for each contraction.	1	2	3	4	5	6	7	8	9	10
5.18. Use breathing during labor contractions.	1	2	3	4	5	6	7	8	9	10
5.19. Keep myself in control.	1	2	3	4	5	6	7	8	9	10
5.20. Think about relaxing.	1	2	3	4	5	6	7	8	9	10

5.21. Concentrate on an object in the room to distract myself.	1	2	3	4	5	6	7	8	9	10
5.22. Keep myself calm.	1	2	3	4	5	6	7	8	9	10
5.23. Concentrate on thinking about the baby.	1	2	3	4	5	6	7	8	9	10
5.24. Stay on top of each contraction.	1	2	3	4	5	6	7	8	9	10
5.25. Think positively.	1	2	3	4	5	6	7	8	9	10
5.26. Not think about the pain.	1	2	3	4	5	6	7	8	9	10
5.27. Tell myself that I can do it.	1	2	3	4	5	6	7	8	9	10
5.28. Think about others in my family.	1	2	3	4	5	6	7	8	9	10
5.29. Concentrate on getting through one contraction at a time.	1	2	3	4	5	6	7	8	9	10
5.30. Focus on the person helping me in labor.	1	2	3	4	5	6	7	8	9	10
5.31. Listen to encouragement from the person helping me.	1	2	3	4	5	6	7	8	9	10

Father's Adaptation - Section 5:

Part 1: Think about how you imagine labour will be and feel for your partner when she is having contractions 5 minutes apart or less. Please indicate how sure you are of your ability to assist your partner to use each behaviour to help her cope with this part of labour by circling a number between 1, not at all sure, and 10, completely sure.

	Not at all sure									Completely sure
5.1. Relax her body.	1	2	3	4	5	6	7	8	9	10
5.2. Get ready for each contraction.	1	2	3	4	5	6	7	8	9	10
5.3. Use breathing during labour contractions.	1	2	3	4	5	6	7	8	9	10
5.4. Keep herself in control.	1	2	3	4	5	6	7	8	9	10
5.5. Think about relaxing.	1	2	3	4	5	6	7	8	9	10
5.6. Concentrate on an object in the room to distract herself.	1	2	3	4	5	6	7	8	9	10
5.7. Keep herself calm.	1	2	3	4	5	6	7	8	9	10
5.8. Concentrate on thinking about the baby.	1	2	3	4	5	6	7	8	9	10
5.9. Stay on top of each contraction.	1	2	3	4	5	6	7	8	9	10
5.10. Think positively.	1	2	3	4	5	6	7	8	9	10
5.11. Not think about the pain.	1	2	3	4	5	6	7	8	9	10
5.12. Tell herself that she can do it.	1	2	3	4	5	6	7	8	9	10
5.13. Think about others in her family.	1	2	3	4	5	6	7	8	9	10
5.14. Concentrate on getting through one contraction at a time.	1	2	3	4	5	6	7	8	9	10

5.15. Listen to encouragement from the person helping her.	1	2	3	4	5	6	7	8	9	10
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Part 2: Think about how you imagine labour will be and feel for your partner when she is pushing your baby out to give birth. Please indicate how sure you are of your ability to assist your partner to use each behaviour to help her cope with this part of labour by circling a number between 1, not at all sure, and 10, completely sure.

	Not at all sure									Completely sure
5.16. Relax her body.	1	2	3	4	5	6	7	8	9	10
5.17. Get ready for each contraction.	1	2	3	4	5	6	7	8	9	10
5.18. Use breathing during labour contractions.	1	2	3	4	5	6	7	8	9	10
5.19. Keep herself in control.	1	2	3	4	5	6	7	8	9	10
5.20. Think about relaxing.	1	2	3	4	5	6	7	8	9	10
5.21. Concentrate on an object in the room to distract herself.	1	2	3	4	5	6	7	8	9	10
5.22. Keep herself calm.	1	2	3	4	5	6	7	8	9	10
5.23. Concentrate on thinking about the baby.	1	2	3	4	5	6	7	8	9	10
5.24. Stay on top of each contraction.	1	2	3	4	5	6	7	8	9	10
5.25. Think positively.	1	2	3	4	5	6	7	8	9	10
5.26. Not think about the pain.	1	2	3	4	5	6	7	8	9	10
5.27. Tell herself that she can do it.	1	2	3	4	5	6	7	8	9	10
5.28. Think about others in her family.	1	2	3	4	5	6	7	8	9	10
5.29. Concentrate on getting through one contraction at a time.	1	2	3	4	5	6	7	8	9	10
5.30. Focus on the person helping her in labour.	1	2	3	4	5	6	7	8	9	10
5.31. Listen to encouragement from the person helping her.	1	2	3	4	5	6	7	8	9	10

Both –Section 6: Family Satisfaction by Adjectives Scale (F.S.A.S.)

Barraca, J., Yarto, L. L., & Olea, J. (2000). Psychometric properties of a new family life satisfaction scale. *European Journal of Psychological Assessment*, 16, 98-106.

When I am at home, with my family, I mostly feel...							
<i>Please choose <u>one</u> of six possible responses for each pair of words and tick the appropriate circle.</i>	Totally	Quite	To some extent	To some extent	Quite	Totally	
6.1. Happy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Unhappy
6.2. Alone	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Accompanied
6.3. Cheerful	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Miserable
6.4. Consoled	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Disconsolate
6.5. Understood	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Misunderstood
6.6. Tranquil	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Disturbed
6.7. Discontented	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Contented
6.8. Insecure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Secure
6.9. Pleased	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Displeased
6.10. Satisfied	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Dissatisfied
6.11. Inhibited	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	At ease
6.12. Discouraged	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Encouraged
6.13. Censured	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Supported
6.14. Uncomfortable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Comfortable
6.15. Harassed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Relieved
6.16. Not respected	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Respected
6.17. Relaxed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Tense
6.18. Excluded	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Involved
6.19. Agitated	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Serene
6.20. Calm	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Nervous
6.21. Attacked	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Protected
6.22. Joyful	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Sad
6.23. Free	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Weighed down
6.24. Appreciated	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Not appreciated
6.25. Not close	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Close
6.26. Stimulated	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Repressed
6.27. Bad	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Well

Comments:

Thank you for completing this questionnaire.

Please read all instructions carefully and answer every question as best you can. Please be open and honest in your responding. There are no right or wrong answers. Tick only one circle or circle only one number per statement or question. Please do not spend too much time on any one statement or question. You are asked to complete the questionnaires without consulting with your partner. I am interested in your ideas and answers and your partner's ideas and answers separately. Any information you give is confidential and all results are anonymous.

Mother's - Section 1: Childbirth Self-Efficacy Inventory (Scale) (CBSEI)

Lowe, N. (1993). Maternal confidence for labor: Development of the childbirth self-efficacy inventory. *Research in Nursing & Health*, 16, 141-149.

Part 1: Think about how you imagine labor will be and feel when you are having contractions 5 minutes apart or less. For each behavior, indicate how certain you are of your ability to use the behavior to help you cope with this part of labor by circling a number between 1, not at all sure, and 10, completely sure.

	Not at all sure									Com- pletely sure
1.1. Relax my body.	1	2	3	4	5	6	7	8	9	10
1.2. Get ready for each contraction.	1	2	3	4	5	6	7	8	9	10
1.3. Use breathing during labour contractions.	1	2	3	4	5	6	7	8	9	10
1.4. Keep myself in control.	1	2	3	4	5	6	7	8	9	10
1.5. Think about relaxing.	1	2	3	4	5	6	7	8	9	10
1.6. Concentrate on an object in the room to distract myself.	1	2	3	4	5	6	7	8	9	10
1.7. Keep myself calm.	1	2	3	4	5	6	7	8	9	10
1.8. Concentrate on thinking about the baby.	1	2	3	4	5	6	7	8	9	10
1.9. Stay on top of each contraction.	1	2	3	4	5	6	7	8	9	10
1.10. Think positively.	1	2	3	4	5	6	7	8	9	10
1.11. Not think about the pain.	1	2	3	4	5	6	7	8	9	10
1.12. Tell myself that I can do it.	1	2	3	4	5	6	7	8	9	10
1.13. Think about others in my family.	1	2	3	4	5	6	7	8	9	10
1.14. Concentrate on getting through one contraction at a time.	1	2	3	4	5	6	7	8	9	10
1.15. Listen to encouragement from the person helping me.	1	2	3	4	5	6	7	8	9	10

Part 2: Think about how you imagine labor will be and feel when you are pushing your baby out to give birth. For each behavior, indicate how certain you are of your ability to use the behavior to help you cope with this part of labor by circling a number between 1, not at all sure, and 10, completely sure.

	Not at all sure									Com- pletely sure
1.16. Relax my body.	1	2	3	4	5	6	7	8	9	10
1.17. Get ready for each contraction.	1	2	3	4	5	6	7	8	9	10

1.18. Use breathing during labor contractions.	1	2	3	4	5	6	7	8	9	10
1.19. Keep myself in control.	1	2	3	4	5	6	7	8	9	10
1.20. Think about relaxing.	1	2	3	4	5	6	7	8	9	10
1.21. Concentrate on an object in the room to distract myself.	1	2	3	4	5	6	7	8	9	10
1.22. Keep myself calm.	1	2	3	4	5	6	7	8	9	10
1.23. Concentrate on thinking about the baby.	1	2	3	4	5	6	7	8	9	10
1.24. Stay on top of each contraction.	1	2	3	4	5	6	7	8	9	10
1.25. Think positively.	1	2	3	4	5	6	7	8	9	10
1.26. Not think about the pain.	1	2	3	4	5	6	7	8	9	10
1.27. Tell myself that I can do it.	1	2	3	4	5	6	7	8	9	10
1.28. Think about others in my family.	1	2	3	4	5	6	7	8	9	10
1.29. Concentrate on getting through one contraction at a time.	1	2	3	4	5	6	7	8	9	10
1.30. Focus on the person helping me in labor.	1	2	3	4	5	6	7	8	9	10
1.31. Listen to encouragement from the person helping me.	1	2	3	4	5	6	7	8	9	10

Father's Adaptation Section 1:

Continue to think about how you imagine labour will be and feel for your partner when she is having contractions 5 minutes apart or less. Please indicate how sure you are of your ability to coach your partner to use each behaviour to help her cope with this part of labour by circling a number between 1, not at all sure, and 10, completely sure.

	Not at all sure									Completely sure
1.1. Relax her body.	1	2	3	4	5	6	7	8	9	10
1.2. Get ready for each contraction.	1	2	3	4	5	6	7	8	9	10
1.3. Use breathing during labour contractions.	1	2	3	4	5	6	7	8	9	10
1.4. Keep herself in control.	1	2	3	4	5	6	7	8	9	10
1.5. Think about relaxing.	1	2	3	4	5	6	7	8	9	10
1.6. Concentrate on an object in the room to distract herself.	1	2	3	4	5	6	7	8	9	10
1.7. Keep herself calm.	1	2	3	4	5	6	7	8	9	10
1.8. Concentrate on thinking about the baby.	1	2	3	4	5	6	7	8	9	10
1.9. Stay on top of each contraction.	1	2	3	4	5	6	7	8	9	10
1.10. Think positively.	1	2	3	4	5	6	7	8	9	10
1.11. Not think about the pain.	1	2	3	4	5	6	7	8	9	10
1.12. Tell herself that she can do it.	1	2	3	4	5	6	7	8	9	10

1.13. Think about others in her family.	1	2	3	4	5	6	7	8	9	10
1.14. Concentrate on getting through one contraction at a time.	1	2	3	4	5	6	7	8	9	10
1.15. Listen to encouragement from the person helping her.	1	2	3	4	5	6	7	8	9	10

Continue to think about how you imagine labour will be and feel for your partner when she is pushing your baby out to give birth. Please indicate how sure you are of your ability to coach your partner to use each behaviour to help her cope with this part of labour by circling a number between 1, not at all sure, and 10, completely sure.

	Not at all sure									Completely sure
1.16. Relax her body.	1	2	3	4	5	6	7	8	9	10
1.17. Get ready for each contraction.	1	2	3	4	5	6	7	8	9	10
1.18. Use breathing during labour contractions.	1	2	3	4	5	6	7	8	9	10
1.19. Keep herself in control.	1	2	3	4	5	6	7	8	9	10
1.20. Think about relaxing.	1	2	3	4	5	6	7	8	9	10
1.21. Concentrate on an object in the room to distract herself.	1	2	3	4	5	6	7	8	9	10
1.22. Keep herself calm.	1	2	3	4	5	6	7	8	9	10
1.23. Concentrate on thinking about the baby.	1	2	3	4	5	6	7	8	9	10
1.24. Stay on top of each contraction.	1	2	3	4	5	6	7	8	9	10
1.25. Think positively.	1	2	3	4	5	6	7	8	9	10
1.26. Not think about the pain.	1	2	3	4	5	6	7	8	9	10
1.27. Tell herself that she can do it.	1	2	3	4	5	6	7	8	9	10
1.28. Think about others in her family.	1	2	3	4	5	6	7	8	9	10
1.29. Concentrate on getting through one contraction at a time.	1	2	3	4	5	6	7	8	9	10
1.30. Focus on the person helping her in labour.	1	2	3	4	5	6	7	8	9	10
1.31. Listen to encouragement from the person helping her.	1	2	3	4	5	6	7	8	9	10

Mother's - Section 2: Pregnancy-Related Anxiety Scale

Rinni, C., Dunkel-Schetter, C., Wadhwa, P., & Sandman, C. (1999). Psychological adaptation and birth outcomes: the role of personal resources, stress and socio cultural context in pregnancy. *Health Psychology, 18*, 333-345.

<i>Below are 10 statements about how people feel about pregnancy and their baby. Please read the questions and tick the appropriate circle that best represents how you feel.</i>	Never	Seldom	Sometimes	A lot of the time
2.1. I am confident of having a normal childbirth.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2.2. I think my labour and delivery will go normally.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2.3. I have a lot of fear regarding the health of my baby.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2.4. I am worried that the baby could be abnormal.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2.5. I am afraid that I will be harmed during delivery.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2.6. I am concerned (worried) about how the baby is growing and developing inside me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2.7. I am concerned (worried) about losing the baby.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2.8. I am concerned (worried) about having a hard or difficult labour and delivery.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2.9. I am concerned (worried) about taking care of a new baby.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2.10. I am concerned (worried) about developing medical problems during my pregnancy.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

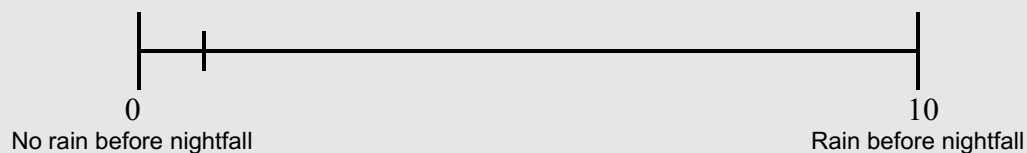
Father's Adaptation Section 2:

<i>Below are 10 statements about how people feel about their partner's pregnancy and their baby. Please read the questions and tick the appropriate circle that best represents how you feel.</i>	Never	Seldom	Sometimes	A lot of the time
2.1. I am confident of my partner having a normal childbirth.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2.2. I think her labour and delivery will go normally.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2.3. I have a lot of fear regarding the health of my baby.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2.4. I am worried that the baby could be abnormal.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2.5. I am afraid that my partner will be harmed during delivery.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2.6. I am concerned (worried) about how the baby is growing and developing inside my partner.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2.7. I am concerned (worried) about her losing the baby.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2.8. I am concerned (worried) about her having a hard or difficult labour and delivery.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2.9. I am concerned (worried) about my role in taking care of a new baby.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2.10. I am concerned (worried) about my partner developing medical problems during her pregnancy.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

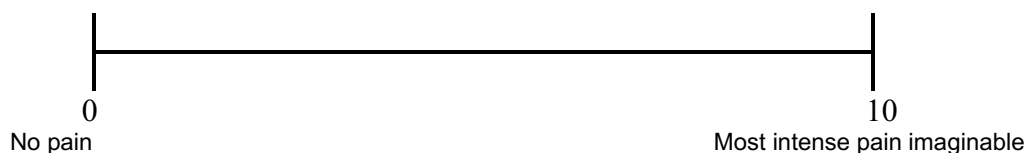
Mother's - Section 3: Pain Visual Analogue Scale

Please use the following scale to rate how painful you expect your labour to be by putting a stroke through the line.

For example: If you are predicting the weather and you expect it will not rain before nightfall, you may put a stroke through the line like below. This would say that you felt there was only a small chance of rain before nightfall.

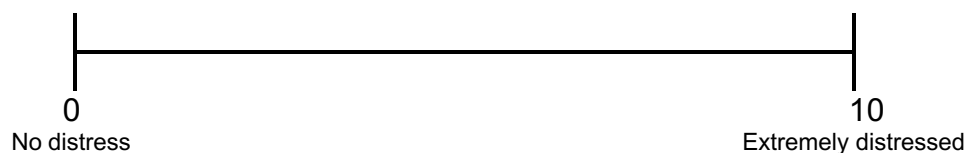


3.1. Labour pain



Please use the following scale to rate how distressed you expect to feel about your labour pain by putting a stroke through the line.

- 3.2 Labour Pain Distress. (By distress I mean how much you expect to feel upset by the pain or how much you expect that you will not be able to cope with the pain)



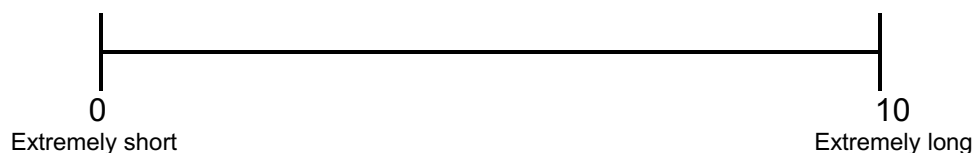
Please use the following scale to rate how helpful you expect you will find your non-medication pain management techniques by putting a stroke through the line.

- 3.3. Pain management



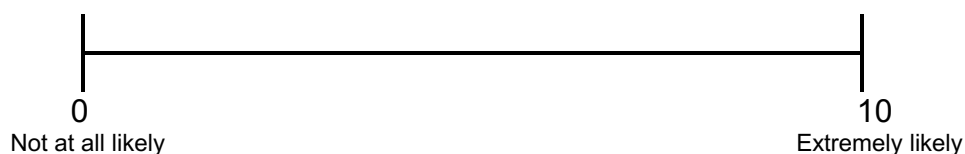
Please use the following scale to rate how long you expect your labour to be by putting a stroke through the line.

- 3.4. Length of labour

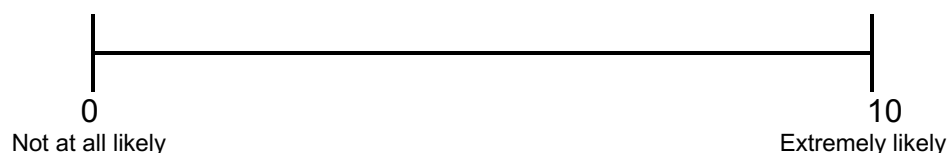


How likely do you expect to want any of the following?

- 3.5. Epidural

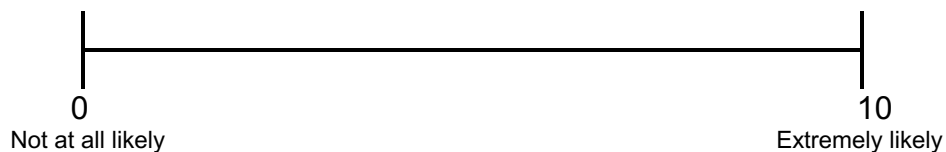


- 3.6. Pain medication such as pethidine

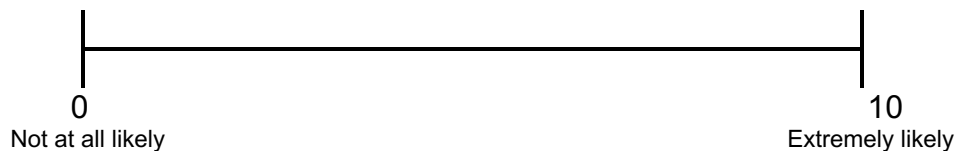


- 3.7. Oxygen (gas)

Giving birth for the first time in NZ

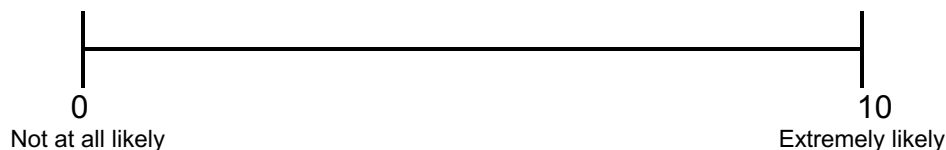


3.8. **No medication at all. I will use other pain management techniques.**

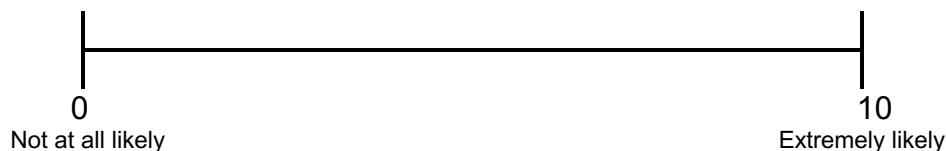


How likely do you expect you will experience the following?

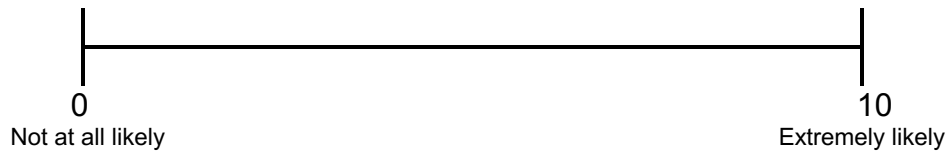
3.9. Caesarean Section



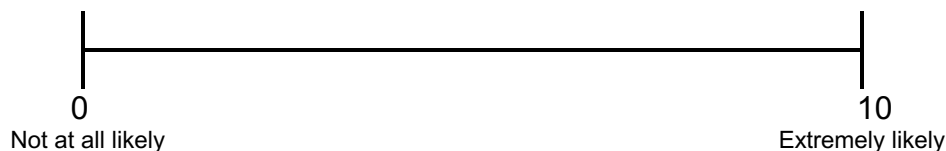
3.10. Assisted vaginal delivery (forceps or ventouse)



3.11. Episiotomy



3.12. Induction (given medication to start your labour)



3.13. No intervention at all (natural birth).



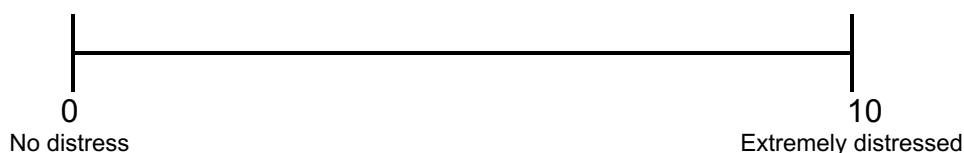
For example: If you are predicting the weather and you expect it will not rain before nightfall, you may put a stroke through the line like below. This would say that you felt there was only a small chance of rain before nightfall.



0 No pain

10 Most intense pain imaginable

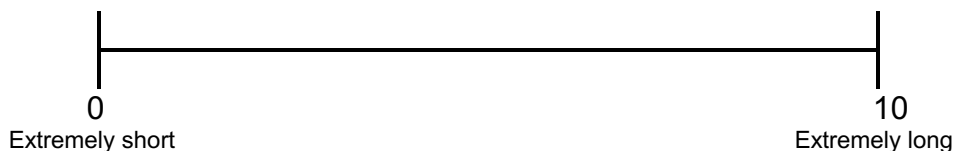
3.2. Labour Pain Distress. (By distress I mean how much you expect to feel upset by her pain or how much you expect that you will not be able to cope with her pain)



3.3. Pain management (non-medication)

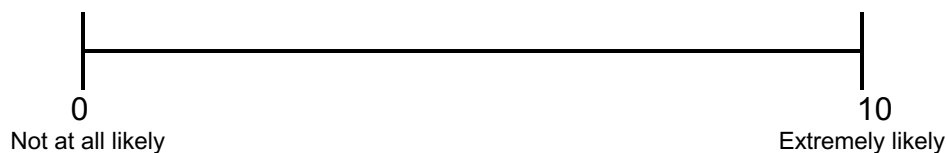


3.4. Length of labour

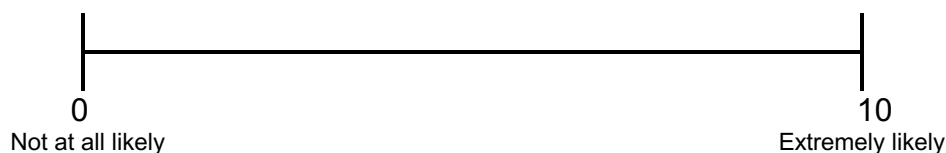


How likely do you expect your partner will want any of the following?

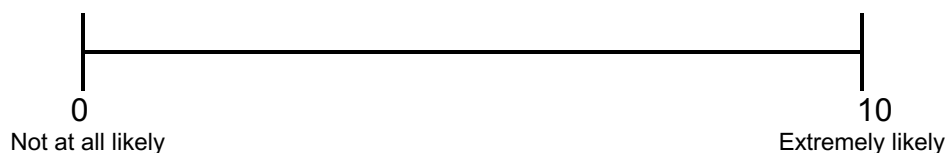
3.5. Epidural (spinal anaesthetic)



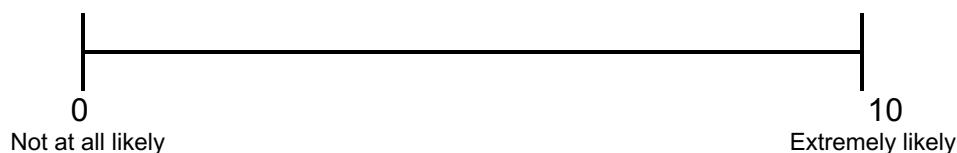
3.6. Pain medication such as pethidine



3.7. Oxygen (gas)

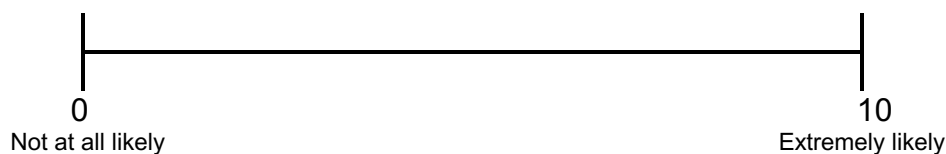


3.8. No medication at all. She will use other pain management techniques.

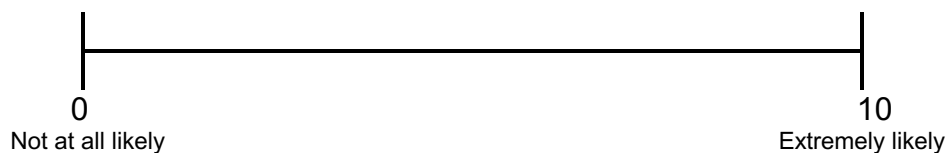


How likely do you expect your partner will experience the following?

3.9. Caesarean Section



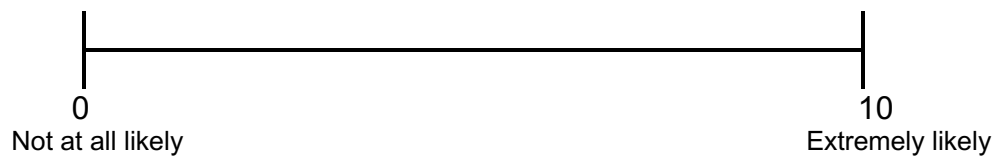
3.10. Assisted vaginal delivery (forceps or ventouse)



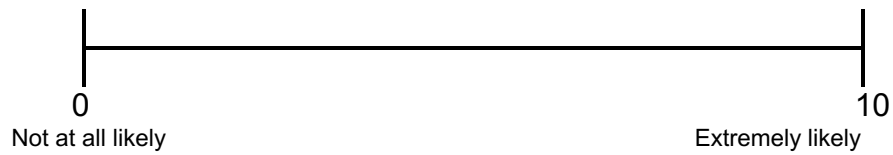
3.11. Episiotomy (a surgical cut to the perineum to prevent tearing as the baby is born)



3.12. Induction (given medication to start her labour)



3.13. No intervention at all (she will have a natural birth).



Section 4: Completion of task (if you were given a task)

4.1. If you were given a task (book to read or programme to work through) to what level were you able to complete this task? Please tick the appropriate circle. If you were not given a task please tick N/A.

- ☐ Less than 25% of the task completed
- ☐ 25% to 50% of the task completed
- ☐ 50%-75% of the task completed
- ☐ Over 75% of the task completed
- ☐ Task completed 100%
- ☐ N/A

Comments:

Thank you for completing this questionnaire.

Please read all instructions carefully and answer every question as best you can. Please be open and honest in your responding. There are no right or wrong answers. Tick only one circle per statement or question. Please do not spend too much time on any one statement or question. You are asked to complete the questionnaires without consulting with your partner. I am interested in your ideas and answers and your partner's ideas and answers separately. COMMENTS ARE NOT COMPULSORY. Comment boxes are available if you want to add something. Any information you give is confidential and all results are anonymous.

Mothers - Section 1:

1.1. Did you use pain management techniques other than medication (e.g. breathing)?

Please circle: Yes No

1.2. If you answered yes to question 1.1., please list what pain management techniques you used:

1.3. Did you use medication to manage your labour pain (eg epidural, pethidine, other medication)?

Please circle: Yes No

1.4. If you answered yes to question 1.3., please list what medication you used:

1.5. Did you require any medical intervention during your labour and birth? Please circle: Yes No

1.6. If you answered yes to question 1.5., please list what intervention/s you required:

1.7. Did your labour happen as you expected? Please circle: Yes No

1.8. Did your birth happen as you expected? Please circle: Yes No

Comments:

Fathers - Section 1:

1.1. Did your partner use pain management techniques other than medication (e.g. breathing)?

Please circle: Yes No

1.2. If you answered yes to question 1.1., please list what pain management techniques she used:

1.3. Did your partner use medication to manage her labour pain (eg epidural, pethidine, other medication)?

Please circle: Yes No

1.4. If you answered yes to question 1.3., please list what medication she used:

1.5. Did your partner require any medical intervention during her labour and birth? Please circle: Yes No

1.6. If you answered yes to question 1.5., please list what intervention/s she required:

1.7. Did your partner's labour happen as you expected? Please circle: Yes No

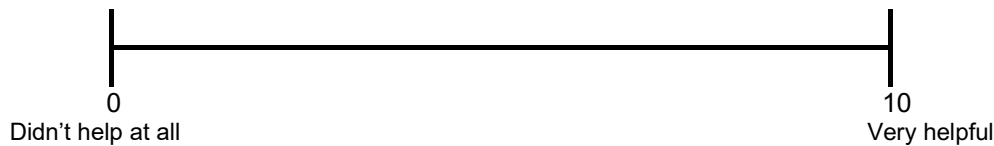
1.8. Did your baby's birth happen as you expected? Please circle: Yes No

Comments:

Please use the following scale to rate how painful you found your labour by putting a stroke through the line.

A horizontal number line with tick marks at 0 and 10. Below the line, the text "No rain before nightfall" is positioned under the tick mark at 0, and "Rain before nightfall" is positioned under the tick mark at 10.

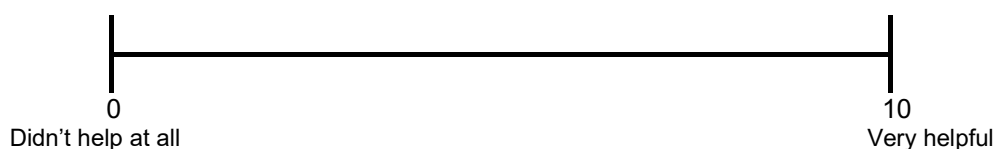
2.2. Non-medication pain management techniques



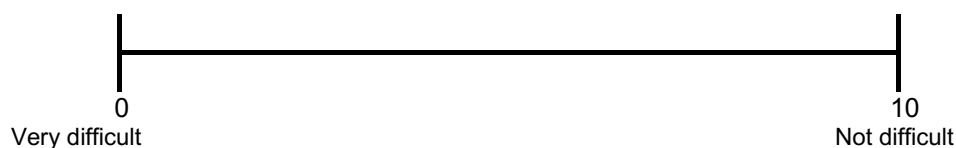
Fathers - Section 2:

A horizontal number line with tick marks at 0 and 10. Below the line, the text "No rain before nightfall" is positioned under the 0 mark, and "Rain before nightfall" is positioned under the 10 mark.

2.3. Non-medication pain management techniques used by your partner



2.4. How difficult did you find witnessing your partner's labour pain?



Comments:

Goodman, P., Mackey, M. C. & Tavakoli, A. S. (2004). Factors related to childbirth satisfaction. *Journal of Advanced Nursing*, 46, 212-219.

For each of the following items listed below, indicate how <u>satisfied or dissatisfied</u> you are with that aspect of your childbirth experience. Tick <u>one</u> response for each item. If a statement is not relevant for you please tick the circle in the N/A column. (You may write in comments about your answer <u>if you wish [not compulsory].</u>)	Very dissatisfied	Dis-satisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied	N/A
3.1. Your overall labour experience.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						
3.2. Your overall delivery experience.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						
3.3. Your level of participation in decision-making during labour.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						
3.4. Your level of participating in decision-making during delivery.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						
3.5. Your ability to manage your labour contractions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						
3.6. Your level of comfort during labour.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						
3.7. Your level of comfort during delivery.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						
3.8. The control you had over your emotions during labour.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						
3.9. The control you had over your emotions during delivery.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						
3.10. The control you had over your actions during labour.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						
3.11. The control you had over your actions during delivery.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						
3.12. Your partner's help and support during labour.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						
3.13. Your partner's help and support during delivery.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						
3.14. Your baby's physical condition at birth.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						

3.15. The amount of time which passed before you first held your baby.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						
3.16. The amount of time which passed before you first fed your baby.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						
3.17. The physical care you received from your midwife during labour and delivery.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						
3.18. The physical care you received from the medical staff (e.g. doctor, anaesthetist etc.) during labour and delivery.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						
3.19. The technical knowledge, ability, and competence of your midwife in labour and delivery.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						
3.20. The technical knowledge, ability, and competence of the medical staff in labour and delivery.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						
3.21. The amount of explanation or information received from your midwife in labour and delivery.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						
3.22. The amount of explanation or information received from the medical staff in labour and delivery.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						
3.23. The personal interest and attention given you by your midwife in labour and delivery.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						
3.24. The personal interest and attention given you by the medical staff in labour and delivery.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						
3.25. The help and support with breathing and relaxation which you received from your midwife in labour and delivery.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						
3.26. The help and support with breathing and relaxation which you received from the medical staff in labour and delivery.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						
3.27. The amount of time your midwife spent with you during labour.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						
3.28. The amount of time the doctors spent with you during labour	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						
3.29. The attitude of your midwife in labour and delivery.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						
3.30. The attitude of the doctors in labour and delivery.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						
3.31. Your midwife's sensitivity to your needs during labour and delivery.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						
3.32. The medical staff's sensitivity to your needs during labour and	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

delivery						
Comments:						
3.33. Overall, the care you received during labour and delivery	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						
3.34. Overall, how satisfied or dissatisfied are you with your childbirth experience?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						

3.35. **Name what contributed to your overall satisfaction or dissatisfaction with your childbirth experience.**

Satisfaction

Dissatisfaction

3.36. **Using the items you named in question 3.35. above, number them in order of importance. Place "1" in front of the item which contributed the most to your satisfaction or dissatisfaction; place "2" in front of the next most important item and so on until you number all of the items.**

Circle one answer code.	Not at all like I expected it to be	Very little like I expected it to be	Somewhat like I expected it to be	Just like I expected it to be
3.37. Generally, was your labour experience like what you expected it would be?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:				
3.38. Generally, was your delivery experience like what you expected it would be?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:				

Circle one answer code.	It was very negative	It was somewhat negative	It was somewhat positive	It was very positive
3.39. Overall, would you rate our labour as being primarily a positive or primarily a negative experience?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:				
3.40. Overall, would you rate your delivery as being primarily a positive or primarily a negative experience?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:				

Father's Adaptation - Section 3:

For each of the following items listed below, indicate how <u>satisfied</u> or <u>dissatisfied</u> you are with that aspect of your experience of the birth of your baby. (Tick <u>one</u> response for each item. You may write in comments about your answer if you wish.) If a statement is not relevant for you please tick the circle in the N/A column.	Very dissatisfied	Dis-satisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied	N/A
3.1. Your overall experience of your partner's labour.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						
3.2. Your overall experience of your baby's delivery.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						
3.3. Your level of participation in decision-making during labour.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						
3.4. Your level of participating in decision-making during delivery.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						

3.5. Your ability to coach your partner to manage her labour contractions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						
3.6. Your level of confidence during your partner's labour.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						
3.7. Your level of confidence during your baby's delivery.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						
3.8. The control you had over your emotions during your partner's labour.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						
3.9. The control you had over your emotions during your baby's delivery.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						
3.10. The control you had over your actions during your partner's labour.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						
3.11. The control you had over your actions during your baby's delivery.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						
3.12. Your partner's connection to you during her labour.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						
3.13. Your partner's connection to you during your baby's delivery.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						
3.14. Your baby's physical condition at birth.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						
3.15. The amount of time which passed before you first held your baby.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						
3.16. The amount of time which passed before your partner first fed your baby.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						
3.17. The physical care your partner received from the midwife during her labour and delivery.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						
3.18. The physical care your partner received from the medical staff (e.g. doctor, anaesthetist etc.) during her labour and delivery.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						
3.19. The technical knowledge, ability, and competence of the midwife in your partner's labour and delivery.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						
3.20. The technical knowledge, ability, and competence of the medical staff in your partner's labour and delivery.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						
3.21. The amount of explanation or information received from the midwife in your partner's labour and delivery.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						
3.22. The amount of explanation or information received from the	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

medical staff in your partner's labour and delivery.						
Comments:						
3.23. The personal interest and attention given you by the midwife in your partner's labour and delivery.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						
3.24. The personal interest and attention given you by the medical staff in your partner's labour and delivery.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						
3.25. The encouragement to help and support your partner with breathing and relaxation techniques which you received from the midwife in your partner's labour and delivery.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						
3.26. The encouragement to help and support your partner with breathing and relaxation techniques which you received from the medical staff in your partner's labour and delivery.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						
3.27. The amount of time the midwife spent with you and your partner during your partner's labour.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						
3.28. The amount of time the doctors spent with you and your partner during your partner's labour	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						
3.29. The attitude of the midwife in your partner's labour and delivery.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						
3.30. The attitude of the doctors in your partner's labour and delivery.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						
3.31. The midwife's sensitivity to your needs during your partner's labour and delivery.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						
3.32. The medical staff's sensitivity to your needs during your partner's labour and delivery	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						
3.33. Overall, the care you and your partner received during your partner's labour and delivery	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						
3.34. Overall, how satisfied or dissatisfied are you with your experience of your baby's birth?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:						

3.35. **Name what contributed to your overall satisfaction or dissatisfaction with your experience of your baby's birth.**

Satisfaction

Dissatisfaction

3.36. **Using the items you named in question 3.35. above, number them in order of importance. Place "1" in front of the item which contributed the most to your satisfaction or dissatisfaction; place "2" in front of the next most important item and so on until you number all of the items.**

Tick one circle for the answer which best fits your experience.	Not at all like I expected it to be	Very little like I expected it to be	Somewhat like I expected it to be	Just like I expected it to be
3.37. Generally, was your experience of your partner's labour like what you expected it would be?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:				
3.38. Generally, was your experience of your baby's delivery like what you expected it would be?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:				

Tick one circle for the answer which best fits your experience.	It was very negative	It was somewhat negative	It was somewhat positive	It was very positive
3.39. Overall, would you rate your experience of your partner's labour as being primarily a positive or primarily a negative experience?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:				
3.40. Overall, would you rate your experience of your baby's delivery as being primarily a positive or primarily a negative experience?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comments:				

Both - Section 4: Postpartum Parental Expectations Survey

Reece, S. M. (1992). The Parent Expectations Survey: A measure of Perceived Self-Efficacy. *Clinical Nursing Research*, 1, 336-346.

The following statements describe what some new parents believe about their abilities to take care of their infants. After reading each statement, please tick the circle of the number that <u>you</u> feel most closely describes how you feel about <u>yourself</u> in relation to parenting. Because these are statements about beliefs, <u>there are no right or wrong answers</u>. Please answer each of the 25 questions below.	<div style="display: flex; justify-content: space-around;"> I cannot do Moderately certain I can do Certain I can do </div>										
	0	1	2	3	4	5	6	7	8	9	10
4.1. I can manage the feeding of my baby.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.2. I can manage the responsibility of my baby.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.3. I can tell when my baby is hungry.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.4. I can deal effectively with the baby when he or she cries for "no reason."	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.5. I can tell when my baby is sick.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.6. I can tell when to add different food items to my baby's diet.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.7. I can manage my household as well as before, meanwhile caring for the baby.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.8. When I think the baby is sick, I can take his or her temperature accurately.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.9. I can give my baby a bath without him or her getting cold or upset.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.10. I can work out my concerns about working or not working now that the baby is here.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.11. I can keep my baby from crying.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.12. I can maintain my relationship with my partner during this next year.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.13. I can meet all the demands placed on me now that the baby is here.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

4.14. I can easily be able to get the baby and myself out for a doctor's visit.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.15. I have good judgment in deciding how to care for the baby.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.16. I can make the right decisions for my baby.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.17. I can get the baby on a good nighttime routine.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.18. I can give the baby the attention he or she needs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.19. I can hire a babysitter when I need one.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.20. I can tell what my baby likes and dislikes.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.21. I can sense my baby's moods.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.22. I can show my love for my baby.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.23. I can calm my baby when he or she is upset.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.24. I can support my baby during stressful times such as visiting the doctor's office.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.25. I can stimulate my baby by playing with him or her.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Mothers - Section 5:

5.1. Did you attend antenatal classes? Please circle: Yes No

5.2. If you answered yes to question 5.1., who was your antenatal class provider?

5.3. Were these classes useful for you? Please circle: Yes No

5.4. If you answered yes to question 5.3., how were they useful?

5.5. Did you take part in any other activities related to birth preparation (e.g. yoga for pregnant Mums)?

Please circle: Yes No

5.6. If you answered yes to question 5.5., what were they?

5.7. Did you use **The Pink Kit Method for Birthing Better** to prepare for your labour and birth?

Please circle: Yes No

5.8. If you answered yes to question 5.7., how did you hear about The Pink Kit Method for Birthing Better?

5.9. If you answered yes to question 5.7., please list what you felt were its advantages and disadvantages of The Pink Kit Method for Birthing Better.

Advantages

Disadvantages

Fathers - Section 5:

5.1. Did you attend antenatal classes with your partner? Please circle: Yes No

5.2. If you answered yes to question 5.1, who was your antenatal class provider?

5.3. Were these classes useful for you? Please circle: Yes No

5.4. If you answered yes to question 5.3., how were they useful?

5.5. Did you take part in any other activities related to birth preparation (e.g. reading books etc)?

Please circle: Yes No

5.6. If you answered yes to question 5.5., what were they?

5.7. Did you use ***The Pink Kit Method for Birthing Better*** to prepare for coaching your partner through her labour and birth?

Please circle: Yes No

5.8. If you answered yes to question 5.7., how did you hear about The Pink Kit Method for Birthing Better?

5.9. If you answered yes to question 5.7., please list what you felt were the advantages and disadvantages of The Pink Kit Method for Birthing Better.

Advantages

Disadvantages

Other comments:

Thank you for completing this questionnaire.

Please read all instructions carefully and answer every question as best you can. Please be open and honest in your responding. There are no right or wrong answers. Tick only one circle per statement or question. Please do not spend too much time on any one statement or question. You are asked to complete the questionnaires without consulting with your partner. I am interested in your ideas and answers and your partner's ideas and answers separately. Any information you give is confidential and all results are anonymous.

Both - Section 1: Postpartum Parental Expectations Survey

Reece, S. M. (1992). The Parent Expectations Survey: A measure of Perceived Self-Efficacy. *Clinical Nursing Research*, 1, 336-346.

The following statements describe what some new parents believe about their abilities to take care of their infants. After reading each statement, please tick the circle of the number that <u>you</u> feel most closely describes how you feel about <u>yourself</u> in relation to parenting. Because these are statements about beliefs, <u>there are no right or wrong answers</u> . Please answer each of the 25 questions below.	I cannot do					Moderately certain I can do					Certain I can do	
	0	1	2	3	4	5	6	7	8	9	10	
1.1. I can manage the feeding of my baby.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
1.2. I can manage the responsibility of my baby.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
1.3. I can tell when my baby is hungry.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
1.4. I can deal effectively with the baby when he or she cries for "no reason."	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
1.5. I can tell when my baby is sick.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
1.6. I can tell when to add different food items to my baby's diet.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
1.7. I can manage my household as well as before, meanwhile caring for the baby.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
1.8. When I think the baby is sick, I can take his or her temperature accurately.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
1.9. I can give my baby a bath without him or her getting cold or upset.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
1.10. I can work out my concerns about working or not working now that the baby is here.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
1.11. I can keep my baby from crying.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
1.12. I can maintain my relationship with my partner during this next year.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
1.13. I can meet all the demands placed on me now that the baby is here.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
1.14. I can easily be able to get the baby and myself out for a doctor's visit.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
1.15. I have good judgment in deciding how to care for the baby.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
1.16. I can make the right decisions for my baby.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
1.17. I can get the baby on a good nighttime routine.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
1.18. I can give the baby the attention he or she needs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
1.19. I can hire a babysitter when I need one.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
1.20. I can tell what my baby likes and dislikes.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
1.21. I can sense my baby's moods.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
1.22. I can show my love for my baby.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
1.23. I can calm my baby when he or she is upset.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
1.24. I can support my baby during stressful times such as visiting the doctor's office.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
1.25. I can stimulate my baby by playing with him or her.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

Both - Section 2: Edinburgh Postnatal Depression Scale (10 items)

Cox, J.L., Holden, J.M., and Sagovsky, R. 1987. Detection of postnatal depression: Development of the 10-item Edinburgh Postnatal Depression Scale. *British Journal of Psychiatry* 150, 782-786 .

As you have recently had a baby, we would like to know how you are feeling. Please tick the circle beside the answer that comes closest to how you have felt IN THE PAST 7 DAYS, not just how you feel today.

- 2.1. I have been able to laugh and see the funny side of things.
- ☐ As much as I always could
 - ☐ Not quite so much now
 - ☐ Definitely not so much now
 - ☐ Not at all
- 2.2. I have looked forward with enjoyment to things.
- ☐ As much as I ever did
 - ☐ Rather less than I used to
 - ☐ Definitely less than I used to
 - ☐ Hardly at all
- 2.3. I have blamed myself unnecessarily when things went wrong.
- ☐ Yes, most of the time
 - ☐ Yes, some of the time
 - ☐ Not very often
 - ☐ No, never
- 2.4. I have been anxious or worried for no good reason.
- ☐ No, not at all
 - ☐ Hardly ever
 - ☐ Yes, sometimes
 - ☐ Yes, very often
- 2.5. I have felt scared or panicky for no very good reason.
- ☐ Yes, quite a lot
 - ☐ Yes, sometimes
 - ☐ No, not much
 - ☐ No, not at all
- 2.6. Things have been getting on top of me.
- ☐ Yes, most of the time I haven't been able to cope at all
 - ☐ Yes, sometimes I haven't been coping as well as usual
 - ☐ No, most of the time I have coped quite well
 - ☐ No I have been coping as well as ever
- 2.7. I have been so unhappy that I have had difficulty sleeping.
- ☐ Yes, most of the time
 - ☐ Yes, sometimes
 - ☐ Not very often
 - ☐ No, not at all
- 2.8. I have felt sad or miserable.
- ☐ Yes, most of the time
 - ☐ Yes, quite often
 - ☐ Not very often
 - ☐ No, not at all
- 2.9. I have been so unhappy that I have been crying.
- ☐ Yes, most of the time
 - ☐ Yes, quite often
 - ☐ Only occasionally
 - ☐ No, never
- 2.10. The thought of harming myself has occurred to me.
- ☐ Yes, quite often
 - ☐ Sometimes
 - ☐ Hardly ever
 - ☐ Never

Both - Section 3: Family Satisfaction by Adjectives Scale (F.S.A.S.)

Barraca, J., Yarto, L. L., & Olea, J. (2000). Psychometric properties of a new family life satisfaction scale. *European Journal of Psychological Assessment*, 16, 98-106.

When I am at home, with my family, I mostly feel...							
<i>Please choose <u>one</u> of six possible responses for each pair of words and tick the appropriate circle.</i>	Totally	Quite	To some extent	To some extent	Quite	Totally	
3.1. Happy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Unhappy
3.2. Alone	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Accompanied
3.3. Cheerful	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Miserable
3.4. Consoled	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Disconsolate
3.5. Understood	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Misunderstood
3.6. Tranquil	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Disturbed
3.7. Discontented	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Contented
3.8. Insecure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Secure
3.9. Pleased	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Displeased
3.10. Satisfied	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Dissatisfied
3.11. Inhibited	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	At ease
3.12. Discouraged	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Encouraged
3.13. Censured	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Supported
3.14. Uncomfortable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Comfortable
3.15. Harassed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Relieved
3.16. Not respected	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Respected
3.17. Relaxed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Tense
3.18. Excluded	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Involved
3.19. Agitated	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Serene
3.20. Calm	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Nervous
3.21. Attacked	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Protected
3.22. Joyful	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Sad
3.23. Free	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Weighed down
3.24. Appreciated	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Not appreciated
3.25. Not close	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Close
3.26. Stimulated	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Repressed
3.27. Bad	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Well

Comments:

Thank you for completing this questionnaire.
Your participation in this project has been greatly appreciated.
I wish you and your family great happiness.

Appendix V: Consent to use and adapt intervention programme

Common Knowledge Trust
P.O. Box 892
Nelson
New Zealand
www.birthingbetter.com

7 Dec 2010

To Whom It May Concern:

We give permission to Anne Howarth to delete any identifying reference to Common Knowledge Trust or The Pink Kit Method For Birthing Better® in the resources being used in the up and coming study, *Giving birth for the first time: The impact of birth skills preparation on parents, midwives and medical interventions in NZ.*

A handwritten signature in black ink, appearing to be 'D, V, [unclear]', likely representing Dr. Virginia Lubell.

Dr. Virginia Lubell
Aka
Wintergreen
Director, Founder and Trustee
Common Knowledge Trust

Appendix W: Birth stories contents page

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Appendix X: Midwives questionnaire and letter

Anne Howarth
Department of Psychological Medicine
Dunedin School of Medicine
PO Box 913
Dunedin 9054

Telephone No: 03 4747007 extn 7387 (please leave a message)
Cell: 02 BIRTHING or 02 2478 4464

Email: anne@firsttimebirth.co.nz
Website: www.firsttimebirth.co.nz

Dear

Your clients have taken part in the study *Giving birth for the first time in New Zealand*.

I am examining the impact of different types of birth preparation on parents' readiness for birth and early parenthood and the stress experienced by their LMC in providing care for these parents throughout pregnancy, labour, birth and the first weeks post birth. Ethical approval has been given for me to ask you for your assistance in providing the following information. There are 3 questions only.

The participants named above have given their permission for me to ask you about any physical interventions they may have required for the purposes of this study only. For this questionnaire I am interested only if there was a physical issue (expected or unexpected) which impacted on your stress level.

Any information you give is confidential and will be used for the purpose of this research only. No material which could identify you or your clients/patients will be used in any reports on this study.

Please return only the questionnaire in the envelope provided. I am very grateful for your assistance.

Thank you

Anne

This research project has been reviewed and approved by the Lower South Regional Ethics Committee.

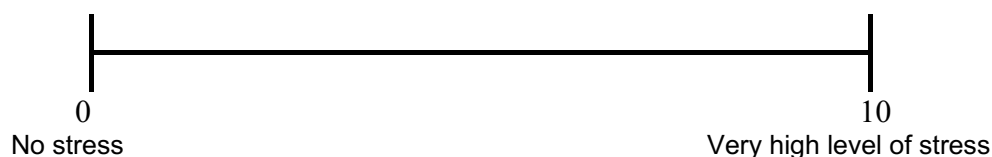
Reference Number: LRS/10/11/052
Date: 17/03/2011

Please use the following scale to rate your stress level in providing care for this client/patient and her partner throughout the total time you have cared for this client/patient and her partner by putting a stroke through the line.

For example: If you are predicting the weather and you expect it will not rain before nightfall, you may put a stroke through the line like below. This would say that you felt there was only a small chance of rain before nightfall.

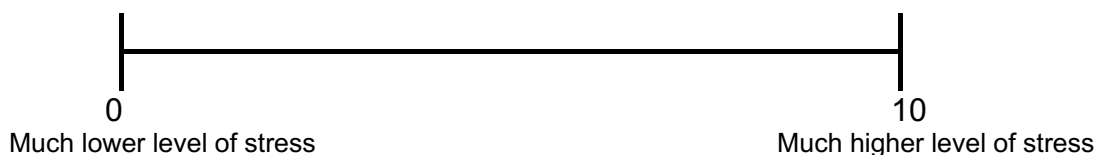


3.1. Your stress level in the performance of your LMC duties to this client/patient and her partner:



Please use the following scale to rate how much less stress or how much more stress you experienced when caring for this client/patient and her partner compared to that you usually experience when caring for a client/patient and her partner by putting a stroke through the line.

3.2. How your level of stress when caring for this client/patient and her partner compared to your other LMC care situations:



3.3. Was there any expected **physical issue** (for example, breech position) or any other **unexpected physical issue** (only physical) which accounted for the stress you experienced?

Please circle:

Yes

No

3.4. Comments (not compulsory).

Thank you for taking time to complete this questionnaire.

Appendix Y: Consents to use measurement instruments

Reece, Susan wrote:

Dear Ann,

You are most welcome to use the survey. It is attached. Please let me know the results of your research when it is complete.

Sincerely,

Susan Reece

Susan M. Reece, DNSc, APRN, BC, Professor

Department of Nursing

School of Health and Environment

University of Massachusetts Lowell

3 Solomont Way, Suite 2

Lowell, MA 01854

Mackey, Marlene wrote:

Dear Anne

Thank you for your interest in the Mackey Childbirth Satisfaction Rating Scale. I am attaching a copy of the instrument. You may use it with the understanding that you will acknowledge the source. Additionally, it would be helpful to me, for psychometric evaluation, if you would share your raw data including: age, race/ethnicity, education, marital status, gestational age and birth weight for the current pregnancy, and gravida, para (term & preterm), & abortions with the scores on the satisfaction instrument. There is an error on page 215, Table 1, of the JAN article. Under "satisfaction with nurse", the 95% CI is = 27.77-52.93. Good luck. I would like to be informed of the publication of your study. Thank you.

Marlene C. Mackey

University of South Carolina

Dear Anne,

How nice to hear from you again. I am happy to give you permission to make the adaptations to the CBSEI that you have described. These will be very interesting data and I look forward to hearing more about your study as it unfolds. Please let me know if there is anything more that you need.

Nancy

Nancy K. Lowe, CNM, PhD, FACNM, FAAN

Professor & Chair

Division of Women, Children, & Family Health

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Childbirth Self-Efficacy Inventory

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Professor, University of Colorado Denver

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Education 2 North, Room 4235

13120 E. 19th Avenue

P.O. Box 6511

Aurora, CO 80045

Thank you for your interest in my research and the Childbirth Self-Efficacy Inventory (CBSEI). I am pleased to send you a copy of the CBSEI for potential use in your research. There is no charge for the use of the CBSEI; however, I ask that you abide by the following stipulations:

1. You will **notify me** of your decision to use the CBSEI in advance of any data collection, supplying me with the title of your study, an abstract of your proposal, and the name of the principal investigator. **If you are a student**, send the name and contact information for your research advisor
2. The **instrument will be photocopied directly from the original (or printed from the electronic file)** and no changes in wording or format will be made without my permission (unless translation is necessary).
3. If it is necessary to translate the instrument, a linguistic specialist will participate in the translation and back translation will be used to establish the validity of the translation. **A copy of the translated instrument will be sent to me on completion of the study for my files.**
4. **Psychometric data** for the instrument from the study data will be sent to me including reliability estimates, any relevant validity information, and results of a factor analysis, if done.
5. On completion, an **abstract of the study** will be sent to me containing a detailed description of sample characteristics, methodology and findings.
6. You will **not give a copy** of the instrument to anyone else, but rather refer him or her to me for a copy of the instrument.

Please call or write if you have questions.

Childbirth Self-Efficacy Inventory

(CBSEI)

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The Ohio State University

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Appendix Z: Chapter 9: Outliers, comparative analyses, Levene test

Chapter 9

Treatment of outliers

There was one outlier in the *fathers' birth satisfaction* dependent variable which had an effect on the data. The following tests were conducted on the original and transformed data with and without this outlying score:

- Shapiro-Wilk test
- Box's M
- ANOVA

1. Results for Shapiro-Wilk test

a. With outlier:

- i. original data - skew = -2.101; statistic = .849, df = 116, p = .000
- ii. transformed data - skew = .603, statistic = .976, df = 116, p = .033

b. Without outlier:

- i. original data: skew = -1.086, statistic = .929, df = 115, p = .000
- ii. transformed data: skew .196, statistic = .992, df = 115, p = .027

2. Results for Box's M test (all partner outcome data including birth satisfaction)

a. With outlier:

- i. original data - Box's M = 75.858, F (Approx.) = 1.664, p = .004 (minimum tolerance = .001)
- ii. All original partners' data passed the tolerance test

b. Without outlier:

- i. original Box's M = 69.499, F (Approx.) = 1.524, p = .016
- ii. All original partners' data passed the tolerance test

3. Results for ANOVA test

a. With outlier:

- i. original data - n = 116, F = 5.213, p = .007
- ii. transformed data - n = 116, F = 4.693, p = .011

b. Without outlier:

- i. original - n = 115, F = 4.436, p = .014
- ii. transformed - n = 115, F = 3.841, p = .024

The effect of the outlier on the results of these tests justified removing this one score from the data spreadsheet and from analysis for fathers' birth satisfaction only.

Tests for Normality and Variability - Kruskal-Wallis tests and Levene's tests Summary Tables

Kruskal-Wallis test for group differences in dependent variables at baseline which did not pass the Shapiro-Wilk test for normality compared to one-way ANOVAS of original and transformed data.

Kruskal-Wallis Test	No.	Chi-Square/F	Sig.
Mothers depression	137	.091	.955
Fathers depression	116	.343	.843
One-way ANOVA – original data			
Mothers depression	137	.121	.886
Fathers depression	116	.034	.966
One-way ANOVA – transformed data			
Mothers depression	137	.071	.932
Fathers depression	116	.343	.711

Kruskal-Wallis test for group differences in dependent variables at outcome which did not pass the Shapiro-Wilk test for normality compared to one-way ANOVAS of original and transformed data.

Kruskal-Wallis Test	No.	Chi-Square/F	Sig.
Mothers childbirth self-efficacy	137	13.225	.001**
Mothers postpartum depression	137	2.516	.284
Fathers postpartum depression	116	3.897	.142
One-way ANOVA – original data			
Mothers childbirth self-efficacy	137	7.725	.001**
Mothers postpartum depression	137	1.450	.238
Fathers postpartum depression	116	.945	.392
One-way ANOVA – transformed data			
Mothers childbirth self-efficacy	137	8.588	.000**
Mothers postpartum depression	137	1.902	.153
Fathers postpartum depression	116	2.538	.083

Significance **p<.01

Levene's test for group differences for homogeneity of variance for the dependent variables at baseline and outcome for mothers and fathers (original and transformed data).

Measure	Levene Statistic	df1	df2	Sig.
Mothers' dependent variables at baseline - original data				
Trait anxiety	.325	2	134	.723
Childbirth self-efficacy	1.233	2	134	.295
Pregnancy Anxiety	.680	2	134	.508
Parenting self-efficacy	.267	2	134	.766
Family life satisfaction	.651	2	134	.523
Depression	1.035	2	134	.358
Mothers dependent variables at outcome - original data				
Childbirth self-efficacy	.718	2	134	.489
Pregnancy Anxiety	.985	2	134	.376
Birth satisfaction	3.767	2	134	.026*
Parenting self-efficacy	.231	2	134	.794
Family life satisfaction	.425	2	134	.637
Postpartum-depression	1.981	2	134	.142
Fathers' dependent variables at baseline - original data				
Trait anxiety	.123	2	113	.884
Childbirth coaching self-efficacy	.207	1	113	.813
Pregnancy Anxiety	3.139	2	113	.047*
Parenting self-efficacy	2.948	2	113	.056
Family life satisfaction	1.177	2	113	.312
Depression	.242	2	113	.786
Fathers' dependent variables at outcome - original data				
Childbirth coaching self-efficacy	.213	1	113	.808
Birth satisfaction	3.822	2	112	.025*
Pregnancy Anxiety	1.551	2	113	.216
Parenting self-efficacy	1.097	2	113	.338
Family life satisfaction	2.418	2	113	.094
Postpartum-depression	2.357	2	113	.099
Transformed Data - Mothers				
Birth satisfaction (outcome) (square root)	1.146	2	134	.321
Transformed data - Fathers				
Pregnancy anxiety at baseline (square root)	2.641	2	113	.076
Birth satisfaction (outcome) (square root)	1.568	2	113	.213

Significance *p<.05

Results for one-way ANOVA comparison of original and transformed data for group differences in dependent variables at baseline and outcome for mothers and fathers.

Measure	Sum of squares	df	Mean Square	F	p
Mothers dependent variables at baseline - original data					
Trait anxiety	5.374	2	2.687	.028	.973
Childbirth self-efficacy	7567.556	2	3783.778	1.914	.151
Pregnancy anxiety	61.431	2	30.715	1.148	.320
Parenting self-efficacy	263.082	2	131.541	.134	.875
Family life satisfaction	808.007	2	404.003	2.069	.130
Depression	5.155	2	2.578	.121	.886
Mothers dependent variables at baseline – transformed data					
Trait anxiety (log 10)	.070	2	.035	.056	.945
Childbirth self-efficacy (square root)	11.008	2	5.504	1.186	.308
Pregnancy anxiety (square root)	.688	2	.344	1.121	.329
Parenting self-efficacy (square root)	.572	2	.286	.057	.945
Family life satisfaction (log 10)	3.815	2	1.908	2.005	.139
Depression (square root)	.144	2	.072	.071	.932
Fathers dependent variables at baseline - original data					
Trait anxiety	15.923	2	7.962	.106	.900
Pregnancy anxiety	34.163	2	17.082	.691	.503
Childbirth coaching self-efficacy (s-eff)	6927.631	2	3463.815	1.131	.326
Parenting self-efficacy	1439.105	2	719.552	.850	.430
Family life satisfaction	107.083	2	53.541	.244	.784
Depression	1.063	2	.531	.034	.966
Fathers dependent variables at baseline - transformed data					
Trait anxiety (log 10)	.002	2	.001	.085	.918
Pregnancy anxiety (square root)	.404	2	.202	.615	.542
Childbirth coaching s-eff (square root)	19.518	2	9.759	1.256	.289
Parenting self-efficacy (square root)	12.086	2	6.043	1.334	.268
Family life satisfaction (log 10)	.012	2	.006	.336	.694
Depression (square root)	.779	2	.390	.343	.711

Mothers dependent variables at outcome - original data					
Childbirth self-efficacy	26723.646	2	13361.823	7.725	.001**
Pregnancy anxiety	121.122	2	60.561	2.554	.082
Birth satisfaction	5805.539	2	2902.770	6.457	.002**
Parenting self-efficacy	861.529	2	430.765	1.069	.346
Family life satisfaction	474.260	2	237.130	.929	.397
Postpartum-depression	49.210	2	24.605	1.450	.238
Mothers dependent variables at outcome - transformed data					
Childbirth self-efficacy (square root)	80.033	2	40.016	8.588	<.001**
Pregnancy anxiety (square root)	.048	2	.024	2.337	.101
Birth satisfaction (square root)	43.635	2	21.817	6.391	.002**
Parenting self-efficacy (square root)	9.118	2	4.559	1.367	.258
Family life satisfaction (log 10)	.030	2	.015	.871	.421
Postpartum-depression (square root)	3.102	2	1.551	1.902	.153
Fathers dependent variables at outcome - original data					
Childbirth coaching self-efficacy	5936.678	2	2968.339	1.142	.323
Pregnancy anxiety	52.013	2	25.506	1.156	.319
Birth satisfaction (without outlier)	2753.597	2	1376.799	4.436	.014*
Parenting self-efficacy	1647.547	2	823.773	1.088	.340
Family life satisfaction	151.272	2	75.636	.226	.798
Postpartum-depression	31.027	2	15.513	.945	.392
Fathers dependent variables at outcome - transformed data					
Childbirth coaching s-eff (square root)	20.855	2	10.427	1.641	.198
Pregnancy anxiety (square root)	1.539	2	.769	1.435	.242
Birth satisfaction (square root)	19.877	2	9.938	3.841	.024*
Parenting self-efficacy (square root)	14.889	2	7.444	1.812	.168
Family life satisfaction (log 10)	.035	2	.017	.811	.447
Postpartum depression (square root)	5.021	2	2.511	2.538	.083

Significance **p<.01, *P<.05